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MICHAEL RODAK, JR., CLERK

**APPENDIX TO PETITION FOR A WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT.**

IN THE
Supreme Court of the United States

OCTOBER TERM, 1976

No. **76-1109**

FOSTER GRANT CO., INC.,

Petitioner,

vs.

ILLINOIS TOOL WORKS, INC.,

Respondent.

IN THE
Supreme Court of the United States

OCTOBER TERM, 1976

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INDEX OF APPENDIX.

PAGE

Opinion of the Court of Appeals—Illinois Tool Works, Inc. v. Foster Grant Co., Inc., December 2, 1967.....	A1-A26
Court of Appeals Judgment Order—December 2, 1976...	A27
Order Denying Petition for Rehearing—December 30, 1976	A27
District Court's Findings of Fact and Conclusions of Law— Illinois Tool Works, Inc. v. Foster Grant Co., Inc., Decided March 4, 1974.....	A28-A78
District Court's Opinion—Illinois Tool Works, Inc. v. Con- tinental Can Company, Decided July 12, 1967...	A79-A144
Court of Appeals Opinion—Illinois Tool Works, Inc. v. Continental Can Company, Decided July 8, 1968.....	A145-A155

Constitutional Provisions and Statutes Involved.....	A156
1. Constitution of the United States, Article I, Section 8	A156
2. Constitution of the United States, Amendment V—Due Process Clause.....	A156
3. The Patent Act, 35 U. S. Code, Section 101.....	A156
4. The Patent Act, 35 U. S. Code, Section 102(a), (b), (g).....	A156-A157
5. The Patent Act, 35 U. S. Code, Section 103....	A157
6. The Patent Act, 35 U. S. Code, Section 112....	A157
7. The Patent Act, 35 U. S. Code, Section 120....	A158
8. The Patent Act, 35 U. S. Code, Section 121....	A158
'213 Patent Application Original Claim 1, as Amended	A159-A160
'213 Patent Application Claim 10, as Amended....	A161-A162

APPENDIX.

IN THE UNITED STATES COURT OF APPEALS For the Seventh Circuit

No. 74-1448

ILLINOIS TOOL WORKS, INC.,

Plaintiff-Appellee,

vs.

FOSTER GRANT CO., INC.,

Defendant-Appellant.

Appeal from the United States District Court for the
Northern District of Illinois, Eastern Division
No. 69-C-481 — Frank J. McGarr, *Judge.*

Argued November 21, 1974 — Decided December 2, 1976

Before FAIRCHILD, *Chief Judge*, PELL, *Circuit Judge*, and
WYZANSKI, *Senior District Judge*.*

FAIRCHILD, *Chief Judge*. This patent infringement action was brought by Illinois Tool Works, Inc. (ITW) against Foster Grant Co., Inc. (Foster Grant). ITW, as assignee, charged Foster Grant with infringement of three patents.

The district court found that all three patents were valid and infringed by Foster Grant, but denied ITW's request for treble damages and attorneys' fees under 35 U. S. C. §§ 284 and 285.

* Senior District Judge Charles E. Wyzanski, Jr. of the District of Massachusetts is sitting by designation.

The court further held that recovery for infringement of the '360 patent by Foster Grant's early Wilson-Champion containers was barred by the applicable statute of limitations, 35 U. S. C. § 286.

The court entered its final judgment permanently enjoining further infringement and ordering an accounting as to past infringement.¹ Defendant Foster Grant appealed, challenging the trial court's finding that the three patents in question are valid; that Foster Grant's products infringe the three patents, assuming their validity; and that all three patents are enforceable and that ITW is not guilty of unclean hands. ITW does not appeal the trial court's holding that the statute of limitations bars recovery for infringement of the '360 patent by Foster Grant's early Wilson-Champion containers.

I. THE ROVICO-HOWMET ISSUE.

Patent No. 3,061,139, "Self-Venting Package," was issued October 30, 1962 on an application filed March 14, 1960, Bryant Edwards, assignor to ITW. The patent was found valid in *Illinois Tool Works, Inc. v. Continental Can Company*, 273 F. Supp. 94 (N. D. Ill. 1967), *aff'd*, 397 F. 2d 517 (7th Cir. 1968). Foster Grant was not a party to that action.

Patent No. 3,139,213, "Nestable Cup," was issued June 30, 1964 on an application filed December 13, 1962, a division of an application filed October 29, 1958, a continuation in part of an application filed November 29, 1957, Bryant Edwards, assignor to ITW. The patent was found valid in *Continental Can, supra*, in *Illinois Tool Works, Inc. v. Sweetheart Plastics, Inc.*, 306 F. Supp. 364 (N. D. Ill. 1969), *aff'd*, 436 F. 2d 1180 (7th Cir. 1971), and in *Illinois Tool Works, Inc. v. Solo Cup Co.*, 179 U. S. P. Q. 322 (N. D. Ill. 1973). Foster Grant was not a party to these actions.

1. The injunction and accounting were stayed pending appeal. The decision of the court below is reported at 181 U. S. P. Q. 553 (N. D. Ill. 1974).

Patent No. 3,091,360, "Nestable Cup," was issued May 28, 1963 on an application filed October 29, 1958, Bryant Edwards, assignor to ITW. The patent was found valid in *Sweetheart Plastics, supra*, and in *Solo Cup, supra*.

In 1967 this court considered the waste of effort involved in repeated full scale trials and considerations of validity of a patent, and held that once there has been a judicial determination of validity, the party challenging validity in a later action in the same court has the burden of presenting "persuasive new evidence" of invalidity and demonstrating that there is a "material distinction" between the cases. *American Photocopy Equipment Co. v. Rovico*, 384 F. 2d 813, 815-16 (7th Cir. 1967), *cert. denied*, 390 U. S. 945. The *Rovico* rule was recently explained and reaffirmed in *Mercantile National Bank of Chicago v. Howmet Corp.*, 524 F. 2d 1031, 1032 (7th Cir. 1975). The court said, "For reasons of stability in the law and judicial economy, we ordinarily will not reexamine *de novo* the decision of the court in the prior case but rather will limit ourselves to a consideration of whether, assuming the correctness of the earlier decision, additional facts not before the court in the prior case require a different result. This is but an application of the doctrine of *stare decisis*."

The parties and the district court did not have the benefit of *Howmet* at the trial in the instant action. *Rovico* was discussed, however, and the district judge expressed some doubt as to the manner in which the record in the subsequent action should be made to reflect the record in the earlier action so that the *Rovico* rule could be applied. We think that the court in the second action should either take judicial notice of the contents of the record in the earlier action or admit it in evidence. At any rate, since the party challenging validity has the burden of showing new evidence and a material distinction between the cases, that party, Foster Grant here, has the burden of getting the earlier record before the court in order to demonstrate the difference. Foster Grant, however, resisted receipt in evidence of portions

of the records in the earlier cases, and in several instances the district court agreed. To the extent that the district court later relied on the *Rovico* rule, Foster Grant cannot legitimately object to consideration of the factual determinations reflected in the decisions of the earlier cases.

On appeal, Foster Grant suggests that this application of the *Rovico* rule is a denial of due process, citing *Blonder-Tongue v. University Foundation*, 402 U. S. 313 at 329 (1971). *Rovico* does not, however, call for the earlier decision to create an estoppel on issues of fact against a person not before the court in the earlier case. Its effect is, instead, very substantially to strengthen the statutory presumption which arises out of a determination of validity in the patent office, itself an *ex parte* determination. 35 U. S. C. § 282. *Rovico* is recognition of the principle that validity is an issue of law, and as long as the facts are the same, the issue of law remains the same. So viewed, *Rovico* seems a sensible and just means of avoiding wasteful, repeated *de novo* examination of an issue.

Insofar as the interest of the public in freedom from an invalid patent monopoly is concerned, the *Rovico* formula creates little problem. One judicial determination of validity, based as here, upon the adversary efforts of very competent counsel, representing clients with substantial interests at stake is a substantial safeguard of the public interest.

The district court noted the *Rovico* rule, indicated there was new evidence which it found unpersuasive, but also stated that it considered the evidence independently from and without reliance upon the prior decisions.

Considering first the adequacy of the decision on the *de novo* approach, we must observe that the decision itself demonstrates the intellectual difficulty in making a really independent examination of complex issues already thoroughly explored, some of them several times over. Although the district court gave at least lip service in deciding the obviousness issue to the step-by-step analysis required by *Graham v. John Deere Co.*, 383 U. S.

1 (1966) the decision did not as completely set out those analytical steps as we would prefer. Instead, it gave substantial emphasis to the history of problems developed in the field, failure of others to solve them, and the commercial success of the inventions. Although such matters are worthy of consideration, they are only secondary factors. *Graham, supra*.

We think that instead of attempting a review of the *de novo* determination, we should first decide whether the judgment can be affirmed under the *Rovico* rule. In so doing, we shall address the six matters which Foster Grant has labeled "Primary Errors," and then proceed to such of the "many additional grounds for reversal" as still have pertinence.

II. THE ALLEGED "PRIMARY ERRORS."

ERROR No. 1.

In attacking the '139 patent, "Self-Venting Package," Foster Grant produced evidence tending to show the production and sale by Kent Plastics Co. of thinwall, thermoformed, plastic cottage cheese containers and vented lids. Edwards made the '139 invention in October, 1959, and his application was filed March 14, 1960. The Kent sales were claimed to have begun in December, 1958 or January, 1959. This was evidence not offered in *Continental Can*, the earlier case involving '139.

The district court found: "[T]he proofs are not sufficient to meet Foster Grant's burden of showing that the Kent development preceded the '139 invention and the Kent Plastics package is different from the '139 Edwards invention in both structure and function and neither anticipates nor renders obvious the '139 invention." We have italicized the part of the finding which Foster Grant claims is clearly erroneous.

Foster Grant argues, "The proof that the Kent containers and vented lids were on sale and in public use before Edwards' '139 invention and, indeed, more than a year before the filing of his application is clear and convincing."

ITW relies on the heavy burden resting upon one who seeks to negative novelty by showing prior use, *Devex Corporation v. General Motors Corporation*, 321 F. 2d 234, 239 (7th Cir. 1963), and argues that Foster Grant did not meet it. "It is fairly clear that Kent Plastics was doing something with a cottage cheese container and a lid prior to the Edwards invention in October of 1959. However, from the evidence presented, it is not clear what the structure was prior to Edwards' inventive date in October, 1959."

It is very clear that Kent received orders for quantities of cottage cheese containers and lids in December, 1958, and made deliveries in February and early March, 1959. The testimony of Kent personnel indicates and the supporting documents are susceptible of the interpretation that although the lids had originally been designed and made for testing purposes without vents, there was a change in design in November, 1958 so that all the lids made in quantity and actually sold, including those delivered in February and March, 1959 had notches in them, serving as vents.

Robert T. Johnson employed by Kent as plastics engineer from May, 1956 to June, 1960, had been in charge of the project. He testified that sometime in 1958 after July 11, test use of lids and containers convinced him that the lids should be vented. The 25 cavity production mold had already been received, but was sent back to the manufacturer to be changed. By placing a pin in the groove in the mold in which the bead of the lid would be formed, an interruption, notch, or vent would be formed in the bead. He conceded the possibility that there might have been a quantity of lids produced in the mold before its change, and that the first delivery in February may have been of lids without vents, but beyond that, "there was just simply no question, they always had vents in them."

Jack Haag has been employed by Kent since 1950, and worked under Johnson. He also explained how pins or bosses were inserted in the mold cavities to produce vents. He testified

that lids without notches had been produced only in the development stage, and that Kent never made unvented lids on production molds.

Certain Kent drawings, dated in March, 1959, show the vents, but they and later drawings are open to the interpretation that the vents were changes, added at a later date. There is evidence of problems experienced with the product, and attempts to make it satisfactory, and ITW appears to suggest that the idea of venting may have been one of those later changes. Unfortunately the district court did not explain its process of decision on the point. Perhaps the court considered testimony as to events from 14 years earlier subject to faulty recollection and therefore not clear and convincing. There was no impeachment of either witness except ITW's suggested bias of Johnson since he also testified for Foster Grant as its expert.

There is in evidence, however, an invoice and receiving report. The invoice, to Kent from a tool maker, is dated December 15, 1958. The amount invoiced is "To cover the cost of altering (1) 25 Cavity Vacuum Form Mold for Container lid. (Added Boss's to Grooves.)" Kent's receiving report shows receipt December 5, 1958.

We think in the light of the testimony, the invoice must have referred to the structures in the molds which formed the notches in the lids. The documents are very persuasive proof corroborating the testimony that the mold was changed late in 1958, and that the lids produced thereafter contained the vents. Thus we agree that the portion of the finding challenged by Foster Grant and italicized above is clearly erroneous.

The court went on to find, however, as above quoted, that the Kent package was different in function from the '139 invention and neither anticipates it nor renders it obvious. In its brief, ITW explains that whenever the notches were first made in the bead of the Kent lid, they were so placed that there were three sealing engagements of parts of the lid with parts of the container "downstream" from the notches, *i.e.*, in a hypothetical

passage of air from the inside of the lidded container to the outside, it would pass through the vents before reaching the first of the three sealing engagements. In the '139 invention, the seal is "upstream" from the vents in order to permit the package to seal, vent, and reseal when the lid and container are in assembled relation. The difference in arrangement causes a difference in function. Foster Grant's reply did not directly address this argument.

Foster Grant proposes a further Error No. 5, and argues that the erroneous finding with respect to the Kent sales of vented lids has significance with respect to Error No. 5. We shall address that point in its sequence. Except as affected by Error No. 5, however, the court's conclusion, above quoted, that the Kent vented lids did not anticipate the '139 patent, nor render it obvious, is correct and is sustained.

ERROR NO. 2.

Foster Grant argues that plastic cups produced and sold by Continental Can in 1956-58 anticipate or render obvious the '213 and '360 patents. Apparently Continental Can had endeavored to develop lines of plastic cups, largely under the supervision of a Mr. Miller. Some of these cups were never offered to the public, but substantial numbers of at least three were sold. These were the 7¼ V, the 7 AB "D", and the 7 AB Special. Foster Grant produced Shelby and Creevy, two former Continental Can employees, and corroborative documents, showing that large numbers of these cups had been sold over a considerable period of time from mid-1956 into early 1958. Shelby and Creevy had not testified in the earlier cases.

In part, the district court found:

"With respect to Continental Can's experimental developments, they were not prior art and/or were not 'anticipations' (35 U.S.C. 102) of or did not render obvious (35 U.S.C. 103) the '213 and '360 inventions.

"Foster Grant has challenged the claimed '213 conception date. This is pertinent because of the Continental Can 7 AB-Special Cup. The Court finds that this Continental Can cup was not developed until after Edwards made the '213 invention and, as such, is not prior art with respect to the '213 patent. I find that Continental Can was involved in the late 1950's in an experimental program of attempting to design a plastic vending cup, a plastic food container, and a plastic ice cream container. Some of the experimental designs were mere proposals, some never went beyond the drawing stage, most never went beyond the laboratory state (and were actually unsuccessful efforts or abandoned experiments), and a few were manufactured in limited quantities and apparently were distributed upon an experimental basis in limited numbers to few Continental Can customers who found them to be unacceptable. None of these was a successful container embodying either of the Edwards inventions.

"These Continental Can cups or containers are not prior art, and are no more than unsuccessful developmental efforts and/or abandoned experiments. The results of this continuous activity caused the entire plastic program at Continental Can to be abandoned and discontinued. As such, none of the Continental Can efforts have any prior art status."

We have italicized the part of the finding which Foster Grant claims is clearly erroneous.

ITW does not challenge in its argument Foster Grant's assertion that it proved that large quantities of the 7¼ V, 7 AB "D", and 7 AB Special had been sold by Continental. Rather, ITW argues that because these cups did not prove satisfactory with respect to having "an operative stacker," they have "no prior art status." We think, on the contrary, that there were sufficient public sales and advertising of these cups so that their structures must be considered to the extent they are pertinent, and that insofar as the portion of the finding challenged by Foster Grant indicates that they need not be considered, it is clearly erroneous.

The district court found in the alternative that these Continental Can products did not anticipate or render obvious the

'213 and '360 inventions. Hence, even if the court erred in deciding that these products need not be considered, the court did consider them and reached the same result by that route.

Continental Can Company itself challenged the validity of the '213 patent, thought not the '360, in *Illinois Tool Works, Inc. v. Continental Can Company*, 273 F. Supp. 94 (N. D. Ill. 1967), *aff'd*, 397 F. 2d 517 (7th Cir. 1968). Judge Decker's opinion there shows careful consideration of the Continental Can activity relied on here, including the cups which were sold in quantity as well as those which remained intramural. He rejected the claim that they anticipated the '213, 273 F. Supp. at 107 to 110, and that they rendered it obvious, 273 F. Supp. at 115 to 117. We find no persuasive new evidence to demonstrate that the legal issues in the present case are really different.

We note that, as Foster Grant asserts, the '360 was not involved in *Continental Can*, and that in considering whether the 7 AB Special, with "a stacking configuration at the bottom of the side wall, which configuration consisted of twelve semi circular indented and inclined intrusions," anticipated '213, Judge Decker stated that it was "quite different from the '213 single continuous Z-shaped ring configuration." P. 109. A difference between '213 and '360 is that claim 1 of '213 calls for "both said internal shoulder means and said external shoulder means being substantially circumferentially continuous" while the claims of '360 call for various arrangements providing circumferential discontinuity. We are not persuaded, however, that 7 AB Special anticipates '360 nor that any of the earlier Continental Can cups, considered with various other prior art elements renders '360 obvious. We note in passing that lack of commercial success of the Continental Can cups at least has a bearing upon whether they rendered the Edwards inventions obvious.

Illinois Tool Works, Inc. v. Sweetheart Plastics, Inc., 306 F. Supp. 364 (N. D. Ill. 1969), *aff'd*, 436 F. 2d 1180 (7th Cir. 1971), was also heard by Judge Decker. Both '213 and '360 were challenged. Judge Decker considered certain new

evidence, found it unpersuasive, and, denied the attacks on both patents under *Rovico*. Apparently the defendant there did not attempt to attack '360 separately from '213 on the basis of the earlier Continental Can products as Foster Grant does here.

This court affirmed as to '213 on the authority of *Rovico*. As to '360, this court gave separate consideration finding no anticipation, and, after a *Graham* analysis, no obviousness, and affirmed.

The validity of both '213 and '360 was again challenged in *Illinois Tool Works, Inc. v. Solo Cup Co.* (N. D. Ill. 1973), 179 U. S. P. Q. 322. The district court (Judge Austin) re-examined the issues rather than relying wholly on *Rovico*, although he noted and doubtless gave effect to the increased weight of the presumption of validity, arising from the earlier ITW decisions. 179 U. S. P. Q. at 344. On the facts before him, Judge Austin concluded that the earlier Continental Can cups were experiments which failed, 179 U. S. P. Q. at 346 and 354 to 362. But he also decided, among other things, that even if the 7 AB Special were prior art, it did not anticipate nor render obvious the '213 or '360 inventions. 179 U. S. P. Q. at 359-60.

Although Foster Grant appears to have proved more substantial sales of several of the earlier Continental Can cups than proved in the earlier cases, it has not persuaded either the district court or us that any of them anticipated or rendered obvious the '213 or '360 inventions.

ERROR No. 3.

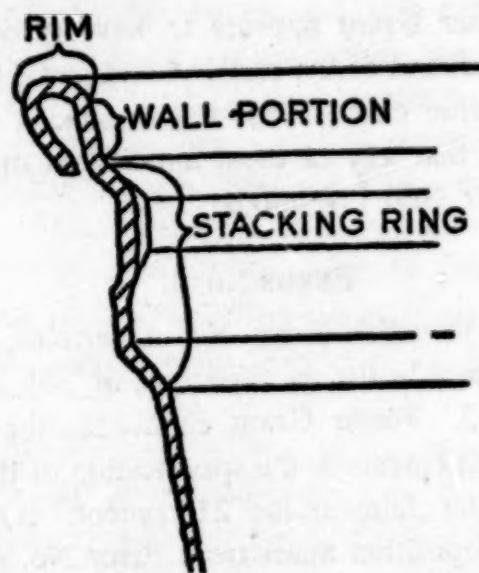
In the matter to which Error No. 4 pertains, Foster Grant relies on a statement in the specifications of '360 in interpreting the claim in '213. Foster Grant challenges the court's statement that "The statements in the specification of the '360 patent are irrelevant to the claims in the '213 patent." It is unnecessary to discuss this proposition apart from Error No. 4.

ERROR NO. 4.

Fost Grant challenges the assertion of the district court that: "Foster Grant relies on a statement in the specification of the '360 patent to equate lip and rim. . . . The Court does not consider the lip to be the rim, but rather to be a separate entity attached to the rim."

The problem arises in connection with the claim that certain Foster Grant cups infringed Claim 1 of '213. Under Claim 1 the sidewall of the container (cup) tapers generally upwardly and outwardly "to an upper margin defining an open upper end . . . said upper margin having a rim of predetermined axial extent which is of sufficient increased lateral width relative to the thickness of the thin plastic sidewalls to lend required lateral strength at said open upper end" and the sidewall has circumferential stacking ring means "positioned below and spaced axially from said upper rim and having an axial extent greater than the axial extent of the rim portion. . . ."

At the top of the upper body portion of one of the accused Foster Grant cups there is an outwardly and downwardly turned portion which ITW has designated RIM on the drawing reproduced in this opinion.



This portion continues into a downwardly and inwardly turned portion which we shall refer to as a skirt. The district court took the position that the skirt is the "lip" as the word is used in the patent, and that for the purpose of the claim language concerning the position of the stacking ring, the upper rim is as designated RIM on the drawing and does not include the skirt ("lip"). When "upper rim" is thus limited, the stacking ring means is entirely "below and spaced axially from said upper rim" and infringement was properly found.

If the "upper rim" be deemed to include the entire skirt, then the upper rim of the accused cup, extends, at least on the outside of the cup, to a level axially below the upper portion of the stacking ring means, and it would follow that the terms of the claim are not literally fulfilled by the accused cup.

Foster Grant maintains that the use of the word "lip" in the '213 claims, forces the conclusion that either the '213 patent is invalid under 35 U. S. C. § 102(b), or that Foster Grant's cups do not infringe the '213 patent.

The argument goes as follows, 35 U. S. C. § 210 provides that an applicant of a later filed application may have the benefit of the filing date of an earlier, co-pending application, providing that the applicant has satisfied the requirement of 35 U. S. C. § 112 that the specification in the application contain a ". . . written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same. . . ."

In the case at bar, the '213 patent issued on an application filed December 13, 1962, Serial No. 244,320, and explicitly relies for an effective filing date upon a first application filed November 29, 1957, Serial No. 699,678, and upon a second application filed October 29, 1958, Serial No. 769,057. The first application was abandoned after the second application (a continuation-in-part, or C. I. P.) was filed. The '213 patent

was granted on the 1962 application which was filed as a divisional application of the second or C. I. P. application of October 29, 1958.

It is obviously crucial to the validity of the claims of the '213 patent that they relate back to the parent application of 1958. If they do not relate back, then the validity of '213 is judged in light of the prior art as of the December 13, 1962 filing date, and the patent is probably invalid for anticipation under 35 U. S. C. § 102(b) by ITW's sale of its products prior to 1962, but after 1958.

Given this analysis, Foster Grant argues that ITW may not have the benefit of the earlier filing date, because the trial court found that the description of the patented cup in the specifications varied from that of the cup in the patent claims. Specifically, the application of November 29, 1957, Serial No. 699,678, described the cups at issue as follows: "[T]he upper body portion . . . is terminated by an outwardly and downwardly turned lip. . . ." (Emphasis added.) The application of October 29, 1958, Serial No. 769,057 described the cup: "[T]he upper body portion . . . is terminated by an outwardly and downwardly curved lip or rim." (Emphasis added.) The application of December 13, 1962, Serial No. 244,320 described the cup: "[T]he upper body portion . . . is terminated by an outwardly and downwardly turned lip." (Emphasis added.) As already stated, Claim 1 of the '213 patent includes a circumferential stacking ring means ". . . positioned below and spaced axially from said upper rim and having an axial extent greater than the axial extent of the rim portion. . . ." (Emphasis added.)

The trial court found that the "lip" described in the November 29, 1957 application and the December 13, 1962 application was different from the "rim" referred to in the '213 claim, and that the equation of lip and rim in October 29, 1958 application was irrelevant to the '213 patent because it was the parent application of the '360 patent. Foster Grant urges the ingenious argument that ITW is caught in a Hobson's choice

on this issue. If we affirm the district court's finding that lip and rim are used differently, then the '213 patent cannot have the benefit of the earlier 1958 application because the specification does not conform to 35 U. S. C. § 112. Thus, the '213 patent is invalid *per se* both because § 112 is not fulfilled and because of anticipation as of the 1962 filing date.

On the other hand, urges, Foster Grant, if we disagree with the district court and find that lip and rim are used synonymously, then the patent is valid but Foster Grant's cup does not infringe, because its stacking ring is not spaced axially below the skirt, or *downturn* of the lip.

We reject Foster Grant's arguments and affirm the district court's finding of infringement notwithstanding the extent of the downturning skirt in the accused cup.

Both the '213 and '360 specifications state that it is the object of the invention "to provide a cup having a step or shelf intermediate its top and bottom edges . . ." etc., and "to provide a frusto-conical cup having a shelf or step, intermediate its top and bottom margins . . ." etc. These statements, speaking in terms of edges and margins, suggest that the downward extent of an outer skirt is immaterial to the positioning of the stacking ring means. As pointed out by the district court, it is evident that the inventor intended to differentiate the invention from a rim stacker.² The language of the claim is appropriately interpreted with that in view.

Both specifications disclose that "The upper body portion 16 is terminated by an outwardly and downwardly turned lip 18." Foster Grant points out the dictionary definition of rim as "the outer often curved or circular edge or border of something" such as a cup, and that in such context rim, brim, lip, and margin are synonymous. Webster's Third New International Dictionary. But although these terms may be synonymous and de-

2. In a rim stacker, the rim structure itself comprises the upper shoulder and no shelf or support structure is provided apart from, in addition to, and spaced below the rim.

scribe identical portions of a structure, we are mindful of the difficulty of applying exact labels to portions of a varying continuum, and do not find that an extended downward hanging skirt, though it may be part of the "lip" need be part of the "upper rim."

We are aware of the difference in claim language between the two patents, '360 referring to positioning the stacking ring means below the "upper margin," and '213 to positioning such means below and spaced axially from the "upper rim." We have considered Foster Grant's argument that the adoption of the language in '213 created a file wrapper estoppel pertinent to this case. Whatever may have been the reason for the change in terminology, we do not find that it implied any disclaimer which would be significant in this case.

Therefore we conclude it is reasonable to construe the claim so that the "upper rim" is the portion of the accused cup so indicated on the drawing reproduced in this opinion, and it follows that the stacking ring means is positioned below and spaced axially from it. The same construction was made, in answer to the same argument advanced here by Foster Grant, in *Illinois Tool Works, Inc. v. Solo Cup Co.*, 179 U. S. P. Q. 322, 332-33 (N. D. Ill. 1973).

To secure the benefit of the 1958 application under 35 U. S. C. § 120, ITW's assignor had to comply with the mandate of the first paragraph of 35 U. S. C. § 112 that the specification contain a written description of the invention "... in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the same ..." Exact identity of description is not required, but "... the relevant inquiry under the 'how to make' requirement of paragraph one of 35 U. S. C. § 112 is whether the scope of enablement provided to one of ordinary skill in the art by the disclosure is commensurate in scope with the protection sought by the claims." *Application of Cescon*, 474 F. 2d 1331, 1335 (U. S. Ct. of Cust. and Pat. App. 1973). See also, *Application of Cormany*, 476 F. 2d 998 (U. S. Ct. of Cust. and Pat. App. 1973).

On the facts of this case, notwithstanding the fact that lip, margin, upper rim and rim seem not always to have been given identical content, we conclude that the several disclosures are adequate, see *Yosemite Chemical Co. v. United States*, 360 F. 2d 948, 952 (U. S. Ct. of Cl. 1966), and would enable one skilled in the art to practice the invention. They are sufficiently consistent with each other so that the later application has the benefit of the filing date of the earlier under § 120.

ERROR NO. 5.

Foster Grant contends that the district court "erroneously excluded evidence of admissions against ITW's interest relative to certain containers and lids held to be infringements in the *Continental Can* and *Sweetheart* cases."

Foster Grant desired to advance two applications of the epigram, "that which infringes, if later, would anticipate if earlier." *Knapp v. Morss*, 150 U. S. 221, 228 (1893). One is that the Kent containers and vented lids sold in early 1959 were identical to certain Continental Can containers and lids found to be infringements of '139 in *Continental Can, supra*. The other is that the 7AB Special cups sold by Continental Can in 1956-68 were similar to the CVP 9 cup found to infringe '360 in *Sweetheart Plastics, supra*.

Even though the district court found, and we agree, that the Kent products did not anticipate '139 and the 7AB Special cups did not anticipate '360, it is suggested that ITW must, in obtaining findings of infringement in the earlier cases, have obtained a broader construction of these patents than we now recognize and that ITW is now estopped from narrowing the construction. *Smith v. Hall*, 301 U. S. 216, 232.

Although the district court might well have allowed inquiry to test the soundness of these applications, we find no reversible error.

With respect to '139, the formal offer of proof was only that particular exhibits were a container and lid of the type accused

in *Continental Can*. There was no formal offer of testimony that the exhibits were identical to the Kent Plastics products. Apparently the container and lid came into the record in another connection. ITW has asserted in its brief, without contradiction by Foster Grant, that the Kent and Continental Can products were compared and discussed in briefs in the district court, and that it is clear that in the Continental Can lids the seals were upstream from the vents, as in '139, while they were downstream in Kent. Thus the Foster Grant contention breaks down.

With respect to '360, the formal offer of proof was similarly limited. More importantly Foster Grant in its brief claims merely "similarity" between the infringing Sweetheart cup and the 7AB Special. Nothing suggests specifically how it was that the infringement finding in *Sweetheart Plastics* must have committed ITW to a construction of the claims such that the 7AB Special would anticipate.

ERROR NO. 6.

Foster Grant challenges the district court's conclusion (and its finding to the same effect) that "ITW has not been guilty of . . . unclean hands, and [the three patents] are each enforceable."

The challenge is supported by claims of misrepresentations and failures to disclose to the Patent Office. Not all the claims argued in this court were presented to the district court.

The Lid-Popping Problem.

The '139 patent claimed a self-venting package with arrangement such that holding and venting means would be on the downstream side of sealing means "when gaseous material within said container means causes said sealing means portions to disengage with each other" and holding the container and closure in assembled relation "during egress of gaseous material under pressure and emanating from the interior of said container means."

The specification describes a problem encountered in packaging foodstuffs in plastic containers having removable lids. "This is especially true if the foodstuff to be packaged is of the type (such as cottage cheese) which generates a gas after being enclosed in a package." It is further explained (in part):

"When a container 12 is filled with a material such as cottage cheese and the lid 14 is assembled thereto, the biological action of the cottage cheese continues and the cheese ferments or 'works' and thereby self-generates gas. Also some gas (air) is trapped during the assembly of the lid to the filled container.

"Thus, at some later time after packaging, due either to a change in temperature which increases the pressure of the trapped gas or due to the pressures of the gas generated in the interior of the containers package, or a combination thereof, normal lids are literally popped or unseated relative to the container means. Therefore, in the plastic containers and lids shown, it is desirable to leave a venting means which affords easy egress of gas from the interior of the container while still affording a tight seal to maintain sanitary conditions at all other times."

There was proof, as found by the court, that when all-plastic cottage cheese tubs were first used, an unexpected lid-popping problem occurred during handling, shipping or storage. Apparently part of the problem arose at the time of the capping operation: pressure from trapped air made the lid unstable. Various solutions have been developed for this problem. There was also a problem apparently caused by an increase in pressure subsequently to capping. The latter was believed to result from an increase in pressure as a result of generation of gas by the cheese. '139 related to the latter. Edwards, the inventor, and ITW never made tests to verify the belief that pressure increased as a result of gas production. Foster Grant produced proof that only minute quantities of gas are emitted by cottage cheese of marketable quality.

The unclean hands claim in this respect is based on the representations as to the cause of the problem of increase in

pressure after packaging and that the '139 invention solved it. Certain reports of a Mr. Engle, when employed by ITW, dealt with the trapped air part of the problem, and his solution for it, and are claimed to have put ITW on notice that the '139 invention did not avoid lid popping. The proof is somewhat equivocal as to whether there is in fact a substantial problem of lid popping from some cause other than trapped air. As found by the Court, the evidence gives reason to doubt that internal pressure buildup is caused by gases emanating from cottage cheese. The district court found:

"The evidence establishes that ITW believed that cottage cheese does generate gas and no evidence was presented to suggest that ITW felt differently before or during the prosecution of the '139 patent. Thus this contention of an alleged misrepresentation is without foundation."

The finding is not clearly erroneous.

Nondisclosure of Prior Art.

In prosecuting the '360 and '213 patents, ITW did not bring to the attention of the Patent Office certain cups and patents of which ITW's representatives were aware. By hindsight, several of them seem sufficiently relevant so that disclosure (to the extent ITW was aware of them) would have been appropriate, and perhaps required by high standards of candor. Each, however, has been considered by courts in one or more of the earlier cases, *Continental Can*, *Sweetheart Plastics*, and *Solo* and found not to anticipate these patents nor render them obvious.

These items are a so-called Caine cup, so-called Continental Can cups (7-1/4 V, 7AB-D, and 7AB Special), Nowak Patent No. 2,749,572, Gardner Patent No. 3,004,288, Aldington Patent No. 2,985,354, Caine Patent No. 3,045,887.

Misrepresentation of Commercial Success.

Foster Grant points to representations by ITW in the prosecution of '360 which claimed certain commercial acceptance of

containers which were later found unsatisfactory. At best the matter is somewhat equivocal.

Insofar as these matters were raised before the district court, the court's refusal to find unclean hands is not clearly erroneous. Insofar as they were not raised, we see no reason to consider them on appeal.

III. THE ALLEGED "MANY ADDITIONAL GROUNDS FOR REVERSAL."

Infringement of '139.

Foster Grant challenges the trial court's finding of infringement on five grounds.³ First, citing *Deepsouth Packaging Co. v. Laitram Corp.*, 406 U. S. 518 (1972), it contends that it makes and sells only empty dry containers and lids, that do not seal when assembled dry. *Deepsouth* does not support the proposition. That case involved a combination patent and held only that manufacture and export in the United States of the components of a combination patent for assembly and use in another country do not constitute direct infringement in the United States. In the present case, the intended and normal use of Foster Grant's lids and containers is to be filled with wet foodstuffs, such as cottage cheese, which trigger the sealing and venting properties of the package. Foster Grant does not allege that its lids and containers are filled and sealed outside of the United States, nor that the filling of the containers with wet foodstuffs is an unexpected or distorted use. Indeed when sold by Foster Grant the containers and lids are both imprinted with the customer's name and cottage cheese designation.

3. ITW charged that all of Foster Grant's packages (represented by the Wilson-Dow cup chairman and associated lid, the Wilson-Foster cup chairman and associated lid, and the Foster Grant current commercial cup chairman and associated lids) infringe one or more of asserted Claims 1, 2, 6 and 7 of the '139 patent. The district court agreed with all charges of infringement.

Second, Foster Grant challenges the finding of infringement on the ground that the only evidence of infringement are the results of a distorted test conducted by Edwards, ITW's assignor.⁴

The district court in finding infringement relied on application of the claim language of '139 to the accused packages and on the language of Foster Grant's own patent, as well as on the Edwards test. Foster Grant was at liberty to conduct its own tests if it wished, and in fact extensively cross-examined Edwards on the results of his tests. The evidence in the record supports the district court's finding of infringement.

Third, Foster Grant finds it significant that Edwards "admitted he had never seen in commerce defendant's [Foster Grant's] container and lid assembled as a package or containing food." Foster Grant does not seriously contend that in fact its lids and containers are not assembled as packages to contain food in commerce. The mere fact that Edwards personally did not see them so used is irrelevant.

Fourth, Foster Grant asserts as error the fact that there was no evidence that any specific assembled container and lid made by Foster Grant sealed, vented and resealed when containing food. This assertion misapprehends the burden placed on a plaintiff in a patent suit. ITW demonstrated through tests, application of the '139 claim language to the accused cups, and the language of the Foster Grant patent that the accused cup had the capability of sealing, venting and resealing. Moreover, Foster Grant's own expert admitted that in normal commercial production excess gas is sometimes found in the Foster Grant packages, and that the packages did vent in the manner described in the '139 patent. ITW was not required to prove

4. Edwards assembled lids on empty containers after putting a layer of milk on the inside of the container lid receiving groove to obtain a seal, and then pumped in compressed air. He testified that he moistened the groove in order to simulate conditions that actually occurred when the containers are filled with cottage cheese.

that any specific container sealed, vented, and resealed when used in commerce or containing food.

Finally, Foster Grant argues that its accused container and lid packages do not have some of the structures called for by Claim 1 of '139.

A pertinent portion of the claim called for the "container means having a portion of the sidewalls offset radially outwardly relative to other portions of the sidewalls." Everyone agrees this describes a groove, and the accused container has a groove. The claim further calls for the "container means and . . . closure means [lid] each being formed with a sealing means portion for normally engaging each other to seal said container means when in assembled relation." The accused lid has a bead which fits into the groove, and there is evidence that a seal occurs between them. The claim further calls for "one of said closure means and container means being formed with an integral combination holding and venting means portion adapted to be associated with said [groove], said holding and venting means portion being arranged relative to said respective sealing means portions so as to be on the downstream side of said sealing means portions when gaseous material within said container means causes said sealing means portions to disengage with each other, said holding and venting means having no axial movement and thereby holding said container and closure in assembled relation—during egress of [gas]."

In at least one embodiment described in the specification, there are lugs on a slanted edge of the bead of the lid. These lugs engage the upper portion of the groove and retain the lid in assembled relation to the container and space the surface of the upper portion of the groove from the lid sufficiently to provide a vent for the egress of gas.

In the accused package, there are vertical slots in the so-called barb (upper and inwardly extending portion of the groove) which provide a vent for the gas. The district court, in finding

infringement, held that "the integral combination holding and venting means portion directly reads on both 'slot or hole' and the inwardly extending portion (i.e., the barb). . . . The slots in the cups coact with, cooperate with, and are 'associated with' the groove in the cup."

The inventor, Edwards, testified, in connection with a chart, and referring to the claim language "integral combination holding and venting means portion."

"This phrase, the lines are connected to the portion just above the groove in the container and in both photographs, this portion just above the groove is what retains the lid in place and it also has interruptions in it to provide the venting."

He further characterized the upper interim part of the groove as the "lid retaining barb" and referred to "the venting and holding means in the barb of the container. . . ."

We find no error in the court's holding, and reject Foster Grant's claim that the court read the integral combination holding and venting means language on the groove itself, a claim element.

Minute Difference Between '213 and '360.

Claim 1 of '213 calls for circumferential stacking ring means formed in the sidewalls, including externally projecting shoulder means and internal shoulder means projecting inwardly, both said shoulder means "being substantially circumferentially continuous."

Claim 1 of '360 calls for "at least one of said shoulder means having separate means associated therewith for cooperation with a shoulder means of a nested cup to provide a circumferentially discontinuous area to assure air communication between completely nested cups and consequent freedom of individual cup separation from a stack."

Foster Grant complains that ITW originally took the position that the shoulders of four cups were "substantially circum-

ferentially continuous" notwithstanding the presence of certain notches, and that the cups infringed '213. Shortly before trial Edwards conducted physical tests to determine whether there was air communication, and at trial testified that these four cups infringed '360 rather than '213.

Foster Grant attacks the validity of the test and also argues that the claims of both patents are invalid under 35 U. S. C. § 112 for failure particularly to point out and distinctly to claim the invention. We find no merit in either argument. The existence of air communication and freedom of cup separation sufficiently distinctly marks the line between the patents, and the test could be accepted by the district court as a reasonable means of determining on which side of the line particular cups fall. The fact that defendant's expert reached a different conclusion with a different test raises questions only of weight and credibility of evidence.

Rejection of Defendant's Tests for Resiliency.

The same comment as the foregoing applies to the comparison of tests conducted by the parties to demonstrate the resiliency of various types of cups in stacks:

Resiliency as a result of the structures described is significant in both '213 and '360. Claim 1 of '213 closes with the following: "said intermediate section of the stacking means inclined inwardly and upwardly toward the cup axis to present the aforesaid inner shoulder means and to provide a thin-wall, resilient support therefor when axial pressure is applied there against by the external shoulder means of a like, telescopically associated container." Claim 1 of '360 closes with the following: "the inherent flexibility of the thin plastic material of the cup in combination with the aforesaid structural features serving to impart resilient action to a stack of nested cups without jamming when such cups are subjected to axial pressure."

Apparently, in presenting its claim that the subject matter was anticipated or obvious, Foster Grant attempted to prove that

containers in existence prior to the critical dates achieved the resiliency claimed. Tests were run up recently fabricated simulating the form of cups which had been produced prior to the critical dates.

Foster Grant objects to the underlined assertion in the following passage, set forth by the district court:

Specifically, Johnson, Foster Grant's expert, admitted on cross-examination that there was no attempt to duplicate the process variables, such as sheet thickness (R. 2283), plug design (R. 2284-87, 2291-94), and plug temperature (R. 2288-90, 2293-94) which were actually used to make the alleged prior art cups. Johnson also admitted that the selection of these variables alters the construction and performance of a cup or container (R. 2294-95). These tests were all made on cups and containers manufactured by today's technology. The mission of this Court is to determine the prior art 'at the time the invention was made', 35 U. S. C. 103. The advance in technology since 1957 and 1958 cannot be denied and demonstrating what can be achieved with today's technology does not shed any light on what was possible with the technology existing when Edwards made the '213 and '360 inventions. Consequently, *these 'after the fact' tests conducted by Foster Grant for the purpose of this lawsuit have limited probative value.* [Emphasis added.]

We can find no fault with the statement objected to.

The judgment appealed from is AFFIRMED.

A true Copy:

Teste:

*Clerk of the United States Court of
Appeals for the Seventh Circuit.*

UNITED STATES COURT OF APPEALS.

* * (Title Omitted in Printing) * *

No. 74-1448

December 2, 1976

JUDGMENT ORDER.

This cause came on to be heard on the transcript of the record from the United States District Court for the Northern District of Illinois, Eastern Division, and was argued by counsel.

On consideration whereof, it is ordered and adjudged by this court that the judgment of the said District Court in this cause appealed from be, and the same is hereby, Affirmed, with costs, in accordance with the opinion of this court filed this date.

UNITED STATES COURT OF APPEALS.

* * (Title Omitted in Printing) * *

No. 74-1448

December 30, 1976

ORDER.

On consideration of the petition for rehearing and suggestion that it be reheard *en banc* filed in the above-entitled cause, no judge in active service having requested a vote thereon, nor any judge having voted to grant the suggestion, and all of the members of the panel having voted to deny a rehearing,

It Is Ordered that the petition for a rehearing in the above-entitled cause be, and the same is hereby, Denied.

IN THE UNITED STATES DISTRICT COURT

• • (Civil Action No. 69 C 481) • •

Decided: March 4, 1974

FINDINGS OF FACT AND CONCLUSIONS OF LAW.

FINDINGS OF FACT.

I. *The Parties and Jurisdiction.*

The plaintiff, Illinois Tool Works, Inc. (hereinafter "ITW"), is a corporation organized and existing under the laws of the State of Delaware, and has its offices and principal place of business at 8501 West Higgins Road, Chicago, Illinois.

ITW manufactures and sells (in its Conex Division) a variety of products, including thin-wall plastic cups, thin-wall plastic tubs and plastic lids for those cups. Plaintiff's thin-wall plastic cups and tubs are covered by the Edwards' patents Nos. 3,139,213 (hereinafter '213 patent) and 3,091,360 (hereinafter '360 patent) in suit. The packages and/or lids are covered by Edwards' patent No. 3,061,139 (hereinafter '139 patent) in suit.

Defendant Foster Grant Co. (hereinafter "Foster Grant") is a Delaware corporation with a place of business in Chicago, Illinois.

Foster Grant manufactures and sells a variety of plastic cups and packages which ITW charges to be infringements of its '213, '360 and '139 patents in suit.

Edwards' first "Nestable Container" patent application Serial No. 699,678 was filed on November 29, 1957. This application did not include claims covering containers with interrupted stacking devices. On October 29, 1958, Edwards filed a continuation-in-part application. Serial Number 769,050, which CIP included claims to containers with both continuous and interrupted stacking means. Pursuant to an election of species

requirement by the Patent Office, a divisional application was filed on December 13, 1962, comprising claims directed only to containers with the continuous stacking device, and this divisional application subsequently issued as the '213 patent on June 30, 1964. CIP application No. 769,050 issued on May 28, 1963 as the '360 patent, containing claims directed to containers with interrupted stackers. ITW is presently, and since the issue dates set forth above, has been the sole and exclusive owner of U. S. Letters Patent Nos. 3,139,213 and 3,091,360.

The '139 patent in suit, issued on October 30, 1962 with 13 claims and is entitled, "Self-Venting Package." This patent covers generally a lid-container package and/or lid which vents gas from the package when a buildup of pressure occurs.

The actions alleged in ITW's complaint and Foster Grant's counterclaim arise under the patent laws of the United States, 35 U. S. C. §§ 271-287, et seq. This Court has jurisdiction over the parties and the subject matter of ITW's complaint, and the subject matter of Foster Grant's counterclaim. Venue in this judicial district is proper.

II. *Development of the Edwards' Nestable Container Inventions.*

For at least the past twenty-five years, the paper companies have been making and selling (1) paper drinking cups for the vending industry and for over-the-counter usage, and (2) paper tubs for dairy food products (R. 63, 69, 79).¹ The paper containers were designed to be dispensed one at a time by a dispensing device located in an automatic vending machine, at or near a counter and the like, or at a dairy filling station (R. 63-4, 455). A typical paper cup is depicted by PX-13 and a typical paper tub is depicted by PX-14² (R. 66-7, 69, 455-57).

1. R. refers to the trial transcript in this action.

2. PX refers to plaintiff ITW's Exhibit; DX refers to Foster Grant's (defendant's) Exhibit.

Both the paper cups and tubs usually were waxed two-piece containers consisting of a paper conical wall section having an overlapped vertically glued seam and an insert or false paper bottom suitably attached to the lower end of the paper wall (R. 63-4; 66, 69, 455). These paper containers were nestable and were arranged in stacks for shipment, handling and dispensing (R. 64). The fact that they were waxed poses a problem because an undesirable taste could be imparted to the product in the container (R. 66, 69) and the fact that they were of two-piece construction presented leakage problems (R. 66).

With the advent of plastic as a packaging material in the early 50's, plastic containers were made by the "injection-molded" process (PX-15; R. 70-2). Although this process was relatively expensive, injection-molded food tubs, typified by PX-15, were sold during the 50's, primarily as a premium item (R. 72).

In the mid-50's, injection-molded drinking cups (PX-17) were offered for sale by Crown Co. in relatively small commercial quantities (R. 73). These injection-molded cups (PX-17) were nestable and were arranged in stacks for shipment, handling, and dispensing (R. 74). However these containers, as made prior to the invention of the '213 patent, due to their rigidity and breakability, required careful handling in shipment and use (R. 74-5). The Crown cup (PX-17) has a stacking device comprising a vertical thickened section in the sidewall, which was not effective (R. 73). The Crown cup jammed, and was withdrawn from the market (R. 74-5).

While the paper containers were made and priced to be high volume, disposable items, the cost of the injection-molded plastic containers confined their use primarily to premium or specialty products—being intended for reuse rather than being disposable (R. 72).

At or about this same time, other companies—for example, Caine Company—were marketing and selling a thermoformed

plastic cup of the type shown by PX-16 (R. 75). This Caine cup (PX-16) has a stacking device comprised of a series of vertical protuberances around the periphery of the sidewall of the cup (R. 76). However the cups jammed or telescoped when stacked (R. 76-7). Even after several changes in the stacking device, the cup never worked properly and was withdrawn from the market (R. 76-7).

This was the general status of the container field when ITW became interested in designing, making, and commercially selling and all-plastic container (R. 63).

Prior to 1957, ITW was not in the plastic container field (R. 82-3). However, in 1956, ITW became aware of and interested in a technique for thermo-forming thin-sheet plastic material which could be utilized for making containers (R. 82-3). ITW investigated the use of the Politis machine and its related process, which had been developed and made the subject of patent applications, by a Mr. Charles Politis of Athens, Greece—with the view of entering the market with a line of plastic containers made by the Politis thermo-forming process (R. 82-4).

In 1956, Mr. Politis gave ITW several samples of thermo-formed plastic containers made on his machine (PX-18 through PX-20), none of which had any type of stacking device (R. 82-6). In late 1956, ITW's Donald Welshon sent Mr. Politis a Continental Can thermo-formed cup which was unsatisfactory because it jammed, but which did illustrate a more acceptable wall thickness (R. 80; PX-166).

ITW, in 1956, agreed to take an option (R. 85-6). During the option period, ITW investigated Mr. Politis' equipment in Greece and ITW's Donald Welshon made several market surveys which indicated that (1) there existed a substantial commercial potential for marketing plastic containers, and (2) ITW should first attempt to develop plastic drinking cups for the vending industry, and, thereafter, should undertake to develop plastic tubs for the dairy food industry (R. 87-91, 94). ITW

also learned that the process then being practiced by Politis was technically sound, but that the machinery and process would have to be improved (R. 89, 93). It was also apparent that a new cup had to be designed, because there was no satisfactory plastic cup on the market (R. 87, 94, 100, 460).

In May or June, 1957, Bryant Edwards, after working on the solution to the cup problem, conceived of a one-piece, nestable, seamless cup of thin-wall plastic material having a bottom configured to enhance its resistance to deformation, an upwardly and outwardly tapering sidewall of substantial height to permit gripping, a rim constructed to lend lateral strength to the upper end of the container, and a single continuous Z-shaped stacking ring located *either* at the rim or in the sidewall below the rim (PX-21, R. 102, 113, 454, 472-74). These designs were disclosed to and discussed by Messrs. Welshon, Black, Beart, Cathcart and Wiley who were present at an ITW meeting held on June 12 or 13 (PX-21). Mr. Fred Wiley an ITW consultant for thermo-forming machines and methods made notes of the meeting and recorded the Edwards' cup designs and volumetric calculations for such cup designs (R. 102-05, 107, 111-12, 464-471, 1025-28, 1034-43).

Because of the "apparent" advantages of locating the stacking ring at the rim (*i.e.*, increased material for strength and quick release at top of mold), Edwards made a mold drawing (PX-22), with the stacking ring at the rim (R. 113-14, 115, 476, 477). He took the mold drawing (PX-22) to Greece, a mold was constructed, and sample cups (PX-23) of the Edwards first design were made on the Politis sample press (R. 115-17, 477-78, 1000). Some cups were also made on Politis machinery, but these cups were all scrapped (R. 480). The cups made on the sample press were brought back to the United States by Edwards in July, 1957, and were not submitted to anyone outside of ITW (R. 115-17, 482, 1000) Cups (PX-23, PX-24) made from this mold, however, jammed or stuck together (PX-25; R. 119-20, 482-86). As a result, Edwards

abandoned this design and scrapped the mold (R. 120-21, 486).

Edwards then returned to his earlier design (PX-21) with the stacking ring located in the sidewall below the rim and designed an entirely new mold (R. 121, 126). Edwards made or had made several sketches and drawings in August of 1957 of the cup covered by the '213 patent (PX-26, PX-27, PX-28; R. 121, 487-88). In September, 1957, Edwards' new nestable cup (PX-29) was made on the Politis sample machine (PX-31; R. 121-22, 487-91). During September, 1957, and the following few months, the cups (PX-29) were arranged in stacks and the stackability of the new design was tested (R. 122-26, 490). The cups (PX-29) were drop tested in September, 1957, and it was observed that the stacking rings gave these cups a spring-like characteristic (R. 122-26, 490, 492).

By locating the stacking ring in the sidewall below the rim it imparted, as contemplated by Edwards in 1957, the following characteristics to the cup design:

- (1) Guiding Action—the portion of the sidewall above the stacking ring of a lower cup guides the lower shoulder (outwardly projecting) of a stacking ring of an upper cup into stacking relation with the upper shoulder (inwardly projecting) of the lower cup (R. 127, 307, 491-92).
- (2) Increased Stacking Area—the upwardly and inwardly inclined section provides a wider stacking shoulder or shelf to cause greater contact area between adjacent stacking rings (R. 129, 492).
- (3) Lateral or Side-to-Side Rigidity—the upper and lower shoulders prevent the sidewalls of the cups from being squashed or collapsed as a result of the cups being gripped (R. 128, 310, 492). This is of particular importance in thin-wall plastic containers.

- (4) Concentricity—the side wall structure above and below the stacking ring urges the stacking ring at all times “into round”, thereby assuring better stacking of adjacent stacking rings (R. 131, 313). Uniformity of stacking action is also achieved.
- (5) Resiliency—by virtue of the upwardly and inwardly inclined intermediate thin wall plastic section, the stacking ring is “resilient” so that it acts as a spring which is able to withstand axial impact forces normally encountered during handling, storage, and shipment of stacked cups (R. 132, 490, 492).

The subsequently developed cup (PX-48) embodied the design features disclosed by Edwards during the June, 1957 meeting and, as defined by Claim 6, this cup further provides:

- (6) Cam Action—by reason of the inclined shoulder means, additional resilience optionally may be provided to further enhance the axial resiliency of a stack of containers (R. 520-22).

The above-discussed characteristics (1) through (5) flow from and are implicitly a part of Edwards' nestable container invention as embodied in Edwards' original PX-29 cup, as disclosed in the Figures 1-5 cups of the '213 patent, and as found in Foster Grant's accused plastic cups. The above characteristics (1) through (6) flow from and are implicitly part of Edwards' nestable container invention, as embodied in Edwards' PX-48 cup, as disclosed in the Figures 6-8 cups of the '213 patent, and as found in certain ones of Foster Grant's accused plastic cups.

Subsequently, Edwards designed, produced, and tested other cups (PX-30, PX-32), which included the features of the earlier PX-29 cup but were slightly modified (R. 133-34). The PX-30 and PX-32 cups were submitted to Automatic Canteen for evaluation and testing (R. 136-38, 495).

The first substantial order was placed by Automatic Canteen, in December, 1957, for 1,000,000 plastic drinking cups (PX-32; R. 138-39). Shipment to Automatic Canteen began in Spring, 1958 with ITW's production cups (PX-33) embodying the sidewall continuous Z-shaped stacking ring (R. 142-43), 218). Several thousand of such cups were made and shipped (R. 276). However, for the reasons discussed hereinafter, the balance of this and successive orders from Automatic Canteen were filled with cups embodying Edwards' nestable container invention, having an interrupted Z-shaped stacking ring below the rim.

In accordance with its marketing plan, once ITW had developed and marketed a plastic drinking cup for the vending industry, ITW then embodied Edwards' container invention including the continuous Z-shaped stacking ring in an all-plastic tub (PX-47, PX-48) for the dairy food industry (R. 160-66, 524-25). In 1958, ITW began to expand its commercial manufacture, and its first customer for its plastic food tubs was The Borden Company, followed by many other dairies (R. 165-67, 525).

As stated, ITW delivered several thousand of Edwards' all-plastic container invention with the continuous Z-shaped stacking ring (PX-33) to fill the Automatic Canteen order of 1,000,000 plastic drinking cups (R. 276, 503). However, as the only production machine owned by ITW was a Politis machine made in Greece, and inasmuch as this Politis machine was poorly constructed and lacked manufacturing precision, it did not produce good copies of the Edwards container (R. 500-02, 504).

Moreover, field reports indicated that these plastic cups under certain circumstances were not vending as rapidly as paper cups and that upon occasion those plastic cups that were not properly made, caused jamming of the vending machines, thereby shutting them down and requiring the attention of a serviceman to return the machines to service (R. 143-45, 1066-68).

Faced with these problems Edwards had three alternatives available to him: hand sort acceptable cups, redesign the machinery, or redesign the cups (R. 145-46, 507-08).

Edwards elected to redesign the cup, and to this end, in June, 1958 developed an improved cup having an interrupted Z-shaped stacking ring which facilitated cup drop or separation and which permitted greater variations in manufacturing tolerances than did the PX-33 cup (R. 146-51, 508, 518-19, 1064-65). Subsequently, Edwards made several versions of this cup (PX-35 through PX-41), out of which evolved ITW's production cup PX-41 (R. 146-51, 218, 508-11). Several hundred thousand of these PX-41 cups, embodying Edwards' '360 nestable container invention, were made and shipped to Automatic Canteen (R. 152, 514, 1103).

At about this time, Edwards developed another improved cup having an interrupted Z-shaped stacking facility with cams (PX-42 through PX-46; R. 152, 156, 514-18). This cup permitted even greater variations in manufacturing tolerances than did the PX-41 cups (R. 152, 514-18). Consequently, ITW's molds were changed and the balance of the Automatic Canteen order was filled by the PX-46 cups (R. 159). ITW has continued to make and sell plastic drinking cups of the PX-46 type, because the expense involved in changing its vending cup molds back to their original form has not been justified in view of the satisfactory nature of the PX-46 cup design (R. 159-60, 218).

The PX-41 cup (embodying the nestable container invention of Claim 1 of the '360 patent) is characterized as being a one-piece nestable seamless container of thin-wall plastic construction and of a size to be gripped by one hand, having a recessed bottom, a sidewall which tapers, upwardly and outwardly, a rim at the upper end of the sidewall having an increased thickness to lend lateral strength at the upper end of the container, and a circumferentially interrupted Z-shaped stacking ring formed in the sidewall below the rim (R. 150). This stacking ring, as

contemplated by Edwards in 1958, is further characterized as providing:

- (1) Free Cup Separation—the interrupted shoulder construction defines air passages between adjacent nested cups, thereby assuring quick and reliable separation of the lowermost cup from a stack. This feature was obtained without materially impairing the resiliency of stacking ring (R. 148, 326-27, 512).
- (2) Resiliency—the inherent flexibility of the thing plastic material in concert with the shape of the stacking ring and its integral relationship to the sidewall of the cup imparts resiliency to the stacking ring, such that it acts as a spring capable of withstanding axial impact forces normally encountered during handling, storage, and shipment (R. 149, 519-20).
- (3) Easier Stripability—the interrupted shoulder construction in the stacking ring permits the cup to be more readily stripped from a mold than the Edwards cup having a continuous Z-shaped ring. This feature was obtained without sacrificing the overlap produced by the Z-shaped configuration (R. 149, 320-21, 512-13).
- (4) Greater Radial Overlap—for the same ease or difficulty of stripping, the interrupted Z-shaped stacking ring can provide greater radial overlap of the contracting shoulder means than is available with a continuous Z-shaped stacking ring (R. 147-48, 512).
- (5) Guiding Action—the portion of the sidewall above the stacking means of a lower cup guides the lower shoulder (outwardly projecting) of a stacking ring of an upper cup into stacking relation with the upper shoulder (inwardly projecting) of the lower cup (R. 149, 511-12). The cocking of cups encountered with "rim stacking" is eliminated.

- (6) Increased Stacking Area—the upwardly and inwardly inclined section provides a wider stacking shoulder or shelf which causes greater contact area between adjacent stacking rings (R. 147-49, 512).
- (7) Lateral or Side-to-Side Rigidity—the upper and lower shoulders prevent the side walls of the cups from being squashed or collapsed as a result of the cups being gripped (R. 324, 512). This is of particular importance in thin-walled plastic containers.
- (8) Concentricity—the side wall structure above and below the stacking ring urges the stacking ring at all times “into round”, thereby assuring better stacking of adjacent stacking rings (R. 149, 512-13). Uniformity of stacking action is also achieved.¹

Furthermore, even though the stacking ring was interrupted, Edwards took advantage of the inherent resiliency of the thin-wall material and the interrupted shape to produce a stacking ring that was as resilient as the continuous Z-shaped stacking ring (R. 149). Thus Edwards also achieved the advantages of improved cup separability and improved stripability, without impairing the resiliency of the stacking ring and without lessening the ability of the stacking ring to act as a shock absorber (or spring) to protect a stack of cups from axial impact forces normally received during handling and shipment (R. 149).

III. *Commercial Application of Edwards' Container Inventions.*

Both of the Edwards '213 and '360 container inventions are used in one-piece, thin-wall plastic containers sold (1) to vending companies, for example, for vending coffee and soft

1. The subsequently developed PX-46 cup (embodying the nestable container invention of claims 4, 8, 9 and 10) provides:

- (9) Cam Action—by reason of the inclined cam surfaces, additional resilience optionally may be added to provide a resilient stack of cups (R. 153-56, 514-18, 520-22).

drinks (R. 177, 190-191), (2) to retail purchasers for over-the-counter and home consumer usage (R. 177, 185-88), and (3) to dairies for packaging dairy food products (R. 177, 188-90). ITW and its domestic licensees make and sell such containers in large quantities (PX-33, PX-41, PX-46, PX-48, PX-150, PX-151, PX-153, PX-154). In addition, Foster Grant itself makes and sells such containers in large quantities (PX-61, PX-62, PX-63, PX-74 and PX-75).

For the vending industry, the plastic cups are disposed in stacked relation so as to be storable in a magazine (chute) of a dispensing device in a vending machine (R. 179). The stacked cups are delivered to vending machine operators who periodically fill the vending machine with cups and the drinking product (R. 179). The operator manually drops or places the stacked cups in the dispensing magazine which feeds the cups to a dispenser mechanism (R. 179). When the machine is activated by a coin or otherwise, the mechanism segregates the lowermost cup from the remainder of the stack, whereby under the force of gravity the cup drops from its stacked position into a filling station and is filled with a hot or cold beverage, for example, coffee or a soft drink (R. 179). The cup is then grasped by the purchaser and removed from the filling station of the vending machine (R. 179).

For the over-the-counter and home consumer market, the plastic cups are stored and shipped in stacked relation (R. 185-186). In such stacked relation, the cups are adapted to be placed in a manual dispensing device (R. 186). Generally, the lowermost cup in a stack is grasped by the user and physically separated from the stack (R. 186). For those cups designed to be used with a rigid plastic holder at fountains, cafeterias and the like, the holder engages the uppermost cup in a stack so that it can be physically removed from the stack and used as desired (R. 186-88).

For the dairy market, economy of storage, shipping space, and ultimate usage dictate that the plastic tubs be disposed in

stacked relation, with freedom to be separated. The plastic tubs arrive at the dairies in stacks which are manually dropped or placed into chutes that guide the tubs into a dispenser mechanism (R. 188). This mechanism permits separation of the lowermost tub from the stack and thereafter, under the force of gravity, the tub drops onto a conveyer which then conveys the tub to a filling station where the tub is filled with the food product (R. 188). Thereafter, the filled tub is conveyed to a capper station where the tub is capped with a plastic lid (R. 188-89). Finally, the capped tub is conveyed to a cooler or to a packaging station where the filled tub is manually or mechanically placed in cartons or cases for shipment (R. 189-90). The tub, filled with the food product, is usually trucked to supermarkets and stored on shelves until purchased by the housewife (R. 189-90).

Plastic containers that are tightly wedged or jammed together cannot be separated and dispensed by the dispenser mechanism, with the result in the dairies an attendant must clear the dispenser, and in the vending industry a service call is required to clear the machine (R. 190-92). In the over-the-counter and home consumer market, if two cups stick together, either two cups will be dispensed at double cost, or service is delayed by manual separation of the cups (R. 190).

In any event, regardless of the final application and/or usage, in accordance with Edwards '213 and '360 inventions, the thin-walled plastic containers are maintained in stacked relation throughout shipment, storage, and handling, thereby permitting eventual easy and dependable dispensing and separation of the containers (R. 192-94).

VI. *Development of the Edwards Self-Venting Package Invention.*

As stated above, prior to ITW's entry into the container field, the container industry for many years had been making paper tubs, either plan or wax-coated, for the dairy food industry

(PX-14, R. 69). These companies also sold a lid or closure, made either from paper, metal or plastic, which was used to cap the tub after it was filled with cottage cheese or other dairy food products (R. 168).

When, pursuant to its market studies, ITW decided to expand its thermoforming operations into the dairy food market in 1958-59 (R. 162), it began to make and sell an all-plastic cottage cheese tub (PX-47); (R. 162-65). At that time, ITW did not make any kind of lid and, therefore, its customer, the Borden Company, purchased a plastic lid (PX-49) made by Lily-Tulip Cup Corporation for use with plaintiff's cottage cheese tub (R. 168-69, 525). A short time after the Borden Company began packaging its cottage cheese in plaintiff's tubs with Lily-Tulip's lids, Borden received many complaints about "popping" lids (R. 169-70). This was an unexpected circumstance because "popping lids" had not been encountered as a problem in the use of sealed paper tubs. The popping was generally believed to result from the internal pressure of gas generated by the cheese. It was also observed that, after filling and capping at the dairy, the lids would pop off during handling, shipment, or storage prior to purchase by the consumer (R. 169-70, 525-27). It was observed that, since the filled packages were stacked one on top of another, a bump or jarring force caused one of the containers to bounce on top of another, thereby causing a lid to pop off (R. 338-40, 345, 528, 937-38). The "popping lids" obviously spoiled the sanitary condition of the package and rendered the cottage cheese unsaleable (R. 170).

ITW's Bryant Edwards was assigned the task of solving the "lid-popping" problem, which was attributed to either trapped air or a pressure increase (R. 170-73, 339-40, 532, 534-35).¹ The first thing Edwards did was to design a lid (PX-50, PX-52) which would prevent air from being trapped in the package

1. The pressure increase was attributed to changes in temperature, barometric pressure and/or gas generated by cottage cheese (R. 339-40, 534-35).

during the capping operation (R. 173, 529). While the lid successfully prevented "trapped air", it did not stop the lid-popping difficulty (R. 173, 530, 898-99).

Bryant Edwards then concluded that the solution to the problem required a lid that normally would seal a plastic package to prevent leakage of liquid and admission of air, but which, in response to internal gas pressure, would permit gas to escape from the package and then would promptly reseal the package when the pressure was relieved—and would have the ability to repeat this gas-venting action whenever necessary (R. 173).

In October, 1959, Edwards developed a self-venting plastic package which sealed the plastic package and preserved the sanitary condition of the package and, at the same time, permitted any gas under pressure in the package to vent to the atmosphere, and which thereafter resealed the container—all without axial dislodgment of the lid (R. 173-74). Edwards was able satisfactorily to accomplish this by a novel configuration of the engaging areas of the tub and lid, notwithstanding the flexible and delicate characteristic of these areas due to the thin-wall plastic material. Edwards made or had made drawings of his self-venting plastic lid invention, dated as early as October 29, 1959 (PX-52, PX-53, PX-55; R. 530-31). As early as October 26, 1959, Edwards made a sample of his self-venting plastic lid invention (PX-51; R. 173-178, 420). On November 4, 1959, Edwards made a sample of another form of his plastic lid invention (PX-54; R. 531-32). On December 16, 1959, Edwards added a secondary venting feature to his self-venting invention (PX-56; R. 194-96, 420).

Inasmuch as ITW did not have shallow-draw of lid printing equipment, it had the Kleer-Plastics Co., on a subcontract basis, make the lids in accordance with Edwards' self-venting lid invention (R. 536-38).¹

1. ITW subsequently began to make its own lids (R. 536-38).

When ITW's customers used Edwards' inventive lids (OX-51 through 56) with ITW's cottage cheese tubs (PX-47, PX-48), they no longer encountered the "lid-popping" problem (R. 176, 536-37). This was and is attributable to Edwards' self-venting package invention, which (1) is embodied in Edwards' PX-51 lid and PX-47 tub, (2) is disclosed and claimed in the '139 patent in suit, and (3) found in Foster Grant's accused plastic packages.

V. *Commercial Success of Edwards' Nestable Container and Self-Venting Package Inventions.*

The all-plastic containers and packages sold by ITW and its domestic licensees have enjoyed commercial success. That the ITW containers embody the Edwards nestable container and self-venting package inventions is unrefuted in the record (R. 835-38; PX-150, PX-153, PX-157). It is apparent that the commercial success is attributable to the Edwards' nestable container inventions and not to other factors.

With respect to ITW's and its licensees' plastic containers, in each case it is Edwards' container inventions which maintain the cups in proper stacked relationship. If the cups are delivered to the customer in a jammed or wedged condition, the user incurs additional expense and aggravation (R. 190-92), and if lids pop off the package, the product is unsanitary (R. 170).

These customers have a preference for the containers and packages embodying Edwards' container inventions and are satisfied with their accomplishments and performance.

A. *The '213 Patent.*

ITW's sales of its plastic containers (PX-33, PX-48, PX-150) embodying the Edwards '213 container invention have been significant. During the past 14 years, ITW has made and sold in excess of 950,000,000 containers (PX-147A) under the '213 container invention.

The sales by ITW's domestic licensees (PX-151) have been even more significant. Through September of 1972, the domestic licensees have sold in excess of 2,600,000,000 containers (PX-147A) embodying the '213 invention (R. 300).

ITW's domestic licensees have paid ITW over \$1,234,000.00 in royalties for the '213 container invention (PX-147A, PX-151, R. 1309-12).

B. The '360 Invention.

ITW's sales of containers embodying the '360 invention have been considerable. Since 1958, ITW has produced about 3,600,000,000 containers embodying the '360 invention (PX-148A, PX-153, R. 1312).

ITW's domestic licensees have sold over 4,000,000 containers embodying the '360 invention (PX-153, PX-154, PX-148A).

ITW's domestic licensees have paid ITW a total of approximately \$520,000.00 in royalties under the '360 invention through September of 1972 (PX-148A, PX-153, PX-154).

C. The '139 Invention.

ITW has sold over 860,000,000 packages embodying the '139 self-venting package invention (R. 1314-15, PX-149).

ITW's licensees have sold over 366,000,000 packages and/or lids embodying the '139 invention (PX-149, R. 1315). ITW's licensees have paid over \$381,000.00 in royalties to ITW under the '139 invention (R. 1315).

VI. Recognition of Validity of Plaintiff's '213, '360, and '139 Patents.

The validity of the '213 patent in suit was vigorously contested in the *ITW v. Continental Can* action, No. 65 C 2179, but was sustained by both this Court (273 F. Supp. 94) and the Seventh Circuit Court of Appeals (397 F. 2d 517). Notwithstanding the *Continental Can* decision, Sweetheart Plastics, Inc.

again contested the validity of the '213 patent in the *ITW v. Sweetheart* action. Again, the District Court upheld the validity of the '213 patent (306 F. Supp. 364) and the Seventh Circuit Court of Appeals again affirmed (436 F. 2d 1180). Thus the Seventh Circuit has twice held the '213 patent valid.

The validity of the '360 patent was also in issue in the *Sweetheart* case. Its validity was upheld by both the District Court and the Seventh Circuit Court of Appeals (436 F. 2d 1180).

Moreover, both the '213 and '360 patents were again contested in *ITW v. Solo Cup Co.*, 332 (N. E. Ill., 1973), C. A. 69 C 480 and were again held valid and infringed.

The '139 patent was also in issue in the *Continental Can* case and its validity was sustained by both the District Court and the Seventh Circuit Court of Appeals.

VII. Foster Grant Infringes the '213 Patent.

ITW charges that all of Foster Grant's cups having continuous Z-shaped stacking rings, represented by the PX-61, PX-62, and PX-63 cup groups, infringe one or more of the asserted claims 1, 2, 3, 5, 6, 7, 8 and 9 of the '213 patent.¹

1. ITW's infringement charge for the '213 patent is as follows:

Foster Grant Cups	Exhibits	
Wilson-Dow 12 oz.	(PX-61A-1, TDX-7)	1, 2, 3, 5, 6, 7 & 9
Wilson-Dow 16 oz.	(PX-61B-1, TDX-1)	1, 2, 3, 5, 6, 7 & 9
Wilson-Dow 8 oz.	(PX-61C-2, TDX-196)	1, 2, 3, 5, 6, 7 & 9
Wilson-Dow 32 oz.	(PX-61D-2, TDX-199)	1, 2, 3, 5, 6, 7 & 9
Wilson-Fos. Gr. 32 oz.	(PX-62A-1, TDX-14)	1, 5, 6 & 9
Wilson-Fos. Gr. 32 oz.	(PX-62B-1, TDX-9)	1, 5, 6 & 9
Wilson-Fos. Gr. 16 oz.	(PX-62C-1, TDX-3)	1, 5, 6 & 9
Wilson-Fos. Gr. 8 oz.	(PX-62D-1, TDX-20)	1, 5, 6 & 9
Wilson-Fos. Gr. 8 oz.	(PX-62E-2, TDX-226)	1, 5, 6 & 9
Foster Grant 12S	(PX-63A-1, TDX-154)	1, 5, 6, 8 & 9
Foster Grant 7S	(PX-63B-1)	1, 5, 6, 8 & 9
Foster Grant 8S	(PX-63B-1, TDX-152)	1, 5, 6, 8 & 9
Foster Grant 8ST	(PX-63C-1, TDX-150)	1, 5, 6, 8 & 9
Foster Grant 12ST	(PX-63D-1, TDX-153)	1, 5, 6, 8 & 9

(Continued on next page)

A. The Wilson-Dow Cup and the PX-61 Cup Group.

The Wilson-Dow cup is represented by the PX-61 cup group (no longer in commercial production). This PX-61 cup group, in turn, is represented by its "chairman", the Wilson-Dow 12-ounce cup (PX-61A-1). This cup "chairman" (PX 61A-1), like each member of this PX-61 cup group, has a Z-shaped stacking ring in the lower part of the sidewall.¹

ITW's Edwards prepared claim chart PX-68 (in PX-72) which shows how the elements of Claim 1 of the '213 patent read on the Fig. 1 embodiment of the '213 patent. He further prepared claim chart PX-69 (in PX-72) which demonstrates how each of the elements of Claim 1 of the '213 patent read on the Wilson-Dow cup "chairman" (PX-61A-1) (R. 639-41). This same claim chart, PX-69A, shows how the stacking ring element of Claim 1 reads on the stacking ring embodied in the Wilson-Dow cup "chairman" (PX-61A-1) (R. 640).

Edwards further recited how Claim 1 applies both structurally and functionally to the Wilson-Dow cup "chairman" (PX-61A-1) (R. 641-43). In this connection, because Edwards did not have a stack of any of the Wilson-Dow cups, he relied upon his experience in the thin-wall plastic cup field to confirm that the stacking ring in the Wilson-Dow cup "chairman" performed (1) its intended shock absorbing function of pro-

(Continued from preceding page)

Foster Grant 16SO	(PX-63F-1, TDX-158)	1, 5, 6, 8 & 9
Foster Grant 16T	(PX-63G-1, TDX-155)	1, 5, 6, 8 & 9
Foster Grant 16S	(PX-63E-1, TDX-156)	1, 5, 6, 8 & 9
Foster Grant 24TA	(PX-63H-1, TDX-160)	1, 5, 6, 8 & 9
Foster Grant 32T	(PX-63N-1, TDX-162)	1, 5, 6, 8 & 9
Foster Grant 32S	(PX-63I-1, TDX-166)	1, 5, 6, 8 & 9
Foster Grant 32SO	(PX-63J-1, TDX-164)	1, 5, 6, 8 & 9
Foster Grant 32SS	(PX-63K-1, TDX-167)	1, 5, 6, 8 & 9
Foster Grant 32SSO	(PX-63L-1, TDX-163)	1, 5, 6, 8 & 9
Foster Grant 32SSU	(PX-63M-1, TDX-165)	1, 5, 6, 8 & 9

1. Three of the Wilson-Dow "chairmen" (PX-61A), which were partially sectioned, are illustrated in drawing PX-64 in PX-67.

tecting the stack from axial impact, and (2) its intended stacking function of preventing jammed cups (R. 641-43). Edwards also testified how each of the asserted claims reads on and is infringed by the Wilson-Dow cup "chairman" (PX-61A-1) (R. 643-46).¹

Despite the contrary testimony of Foster Grant's expert witness, Mr. Johnson, the Court finds Edwards' conclusions compelling and adopts them.

Foster Grant's contentions that the Wilson-Dow cup group (PX-61) does not infringe Claims 1, 5, 6 and 9 are without merit. With respect to the Wilson-Dow cup group (PX-61) there is a real identity of means, operation, and result between the asserted claims, and the Wilson-Dow cup group (PX-61) infringes these asserted claims of the '213 patent.

B. The Wilson-Foster Grant Cup and the PX-62 Cup Group.

The Wilson-Foster Grant cup is represented by the PX-62 cup group (no longer in commercial production). This PX-62 cup group, in turn, is represented by its "chairman", the Wilson-Foster Grant 32-ounce cup (PX-62A-1). This cup "chairman" (PX-62A), like each member of the PX-62 cup group, has a continuous Z-shaped stacking ring located immediately below the rim in the sidewall.²

ITW's Edwards prepared claim chart PX-70 (in PX-72) which shows how the elements of Claim 1 of the '213 patent read on the Wilson-Foster Grant cup "chairman" (PX-62A-1) (R. 646-47). This claim chart demonstrates how the stacking ring element of Claim 1 reads on the stacking ring embodied in the Wilson-Foster Grant cup "chairman" (PX-62A-1) (R. 647-

1. Edwards also recited how each of the asserted claims applied to the Wilson-Dow 16-ounce cup (PX-61B), the 8-ounce cup (PX-61C), and the 32-ounce cup (PX-61D), the other members of this cup group (R. 643-646).

2. Three of the Wilson-Foster Grant "chairman" (PX-62A-1), which were partially sectioned, are illustrated in drawing PX-65 in PX-67.

48). In this connection, because Edwards did not have a stack of these cups, he relied upon his experience in the plastic cup field to confirm that the stacking ring in the Wilson-Foster Grant cup "chairman" performed (1) its intended shock absorbing function of protecting the stack from axial impact, and (2) its intended stacking function of preventing jammed cups (R. 648-49). Edwards also testified how each of the asserted claims reads on and is infringed by the Wilson-Foster Grant cup "chairman" (PX-62A-1) (R. 650-57).¹

Despite the contrary testimony of Foster Grant's expert witness, Johnson, the Court adopts the testimony and conclusion of Edwards that the Wilson-Foster Grant cup group (PX-62) infringes Claim 1 of the '213 patent, and concludes further that the Wilson-Foster Grant cup group (PX-62) infringes Claims 5, 6 and 9 of the '213 patent.

With respect to the Wilson-Foster Grant cup group (PX-62) there is a real identity of means, operation and result between the PX-62 group and the asserted claims of the '213 patent. Clearly, the asserted claims of the '213 patent are infringed by the PX-62 cup group.

C. The Foster Grant Current Commercial Cup and the PX-63 Cup Group.

The Foster Grant current commercial cup is represented by the PX-63 cup group. This PX-63 cup group, in turn, is represented by its "chairman", the Foster Grant 12S cup (PX-63A-1). This cup chairman (PX-63A-1), like each member of the PX-63 cup group, has a continuous Z-shaped stacking ring located immediately below the rim in the sidewall.¹

1. Edwards also recited how each of the asserted claims applies to the Wilson-Foster Grant 32-ounce cup (PX-62B), the 16-ounce cup (PX-62C) and the 8-ounce cup (PX-62D), the other members of this group (R. 650-57).

1. Three of the current commercial cups (PX-63A) which were partially sectioned are shown in photograph PX-66B (in PX-67).

ITW's Edwards prepared claim chart PX-71A (in PX-72) which shows how the elements of Claim 1 of the '213 patent literally read on the Foster Grant current commercial cup "chairman" (PX-63A) (R. 590-93). This claim chart PX-71 (in PX-72) specifically shows how the stacking ring element embodied in the Foster Grant current commercial cup "chairman" (R. 593-619). In this connection, Edwards conducted inking tests, static load compression tests, comparator load tests, and drop tests on the chairman of this group (R. 600-611, 658). He confirmed that the stacking ring had the claimed characteristics and performed (1) its intended shock absorbing function of protecting the stack from axial impact, and (2) its intended stacking function of preventing jammed cups (R. 602-11).

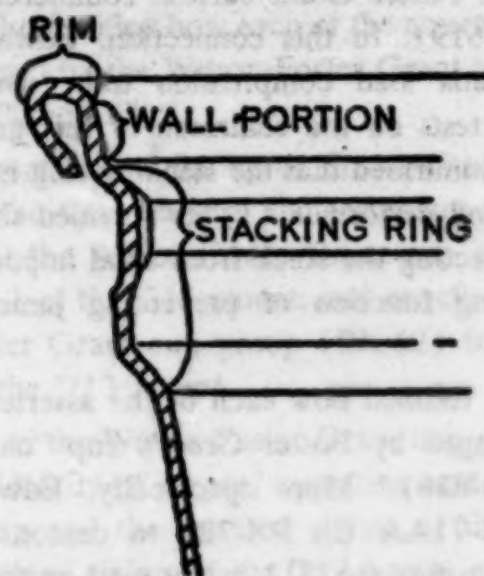
Edwards also testified how each of the asserted claims reads on and is infringed by Foster Grant's cup "chairman" (PX-63A) (R. 619-626).² More specifically, Edwards prepared claim chart PX-71AA (in PX-72) to demonstrate how the elements of Claim 6 of the '213 patent read on the Foster Grant cup "chairman" (PX-63A) (R. 620-22). He explained how the claimed camming element was embodied in the Foster Grant cup "chairman" (R. 621-22).

It is evident from the '213 patent and its file history that Claim 1 defines Edwards' container invention over a container having a rim stacker (R. 1150-1155). In a rim stacker, the rim structure itself comprises the upper shoulder and no shelf or support structure is provided apart from, in addition to, and spaced below the rim, as defined in Claim 1. In contrast to the prior art containers having prior rim stackers, the Foster Grant cup "chairman" (PX-63A) has its Z-shaped stacking ring pro-

2. Edwards also recited how each of the asserted claims applies to Foster Grant's current 8S cup (PX-63B), 8ST cup (PX-63C), the 12ST cup (PX-63D), the 16S cup (PX-63E), the 16SO cup (PX-63F), the 16T cup (PX-63G), the 24TA cup (PX-63H), the 32S cup (PX-63I), the 32SO cup (PX-63J), the 32SS cup (PX-63K), the 32SSO cup (PX-63L), the 32SSU cup (PX-63M), and the 32T cup (PX-63N) (R. 619-626).

vided as a separate element located apart from and spaced below the rim.

The pertinent language of Claim 1 of the '213 patent applies to Foster Grant's current commercial cups, an illustration of which is reproduced below (PX-63-A-5):



Specifically, Claim 1 of the '213 patent calls for a "rim of predetermined axial extent which is of sufficient increased lateral width . . . to lend required lateral strength to said open upper end." This language reads upon the crown or upper part of the cup. Between the "rim" and an upper shoulder of the stacking ring is a wall portion extending in the same general upwardly direction as the side wall. The angle of the "wall portion" on Foster Grant's current commercial cups is $9^{\circ}38''$ which is almost identical to the side wall which is $9^{\circ}30''$ (PX-63A-2, R. 2606).

Beneath the "rim" and the "wall portion" is the upper shoulder has a "rim of predetermined axial extent" and "a stacking ring. Thus, each of Foster Grant's current commercial accused cups has a "rim of predetermined axial extent" and "a stacking ring means . . . positioned below and spaced axially from said upper rim . . . (and having) an axial extent greater than the axial extent of the rim portion", as called for by asserted Claim 1.

The stacking ring in Foster Grant's current commercial cup has the same means, identity, and result as the Edwards' claimed stacking ring.

Foster Grant relies on a statement in the specification of the '360 patent to equate lip and rim. The statements in the specification of the '360 patent are irrelevant to the claims in the '213 patent. The Court does not consider the lip to be the rim, but rather to be a separate entity attached to the rim. Irrespective of the definition of rim used, the stacking ring in Foster Grant's current commercial cups has an axial height greater than the axial extent of the rim and infringes this element of the '213 claims.

Further, the '213 claims call for the stacking ring means to have an "axial extent greater than the axial extent of the rim portion." This element refers to "rim portion" and not to "rim" or "upper rim" used in the earlier claim language. Thus, it follows that the "rim portion" was intended to cover structure other than "rim"—and it is reasonable to conclude that "rim portion" embraces all of the portions associated with the rim, namely, the downwardly extending flange or the undercurled lip.

Parenthetically, the rim element is defined as "a rim of predetermined axial extent which is of sufficient increased lateral width . . . to lend required lateral strength to said open upper end." There is no reference in the claim to the axial extent being predetermined to fit into the "mechanisms in the vending machines". The claim element simply requires that the "rim be of predetermined axial extent which is of increased lateral width . . . to lend required lateral strength to the open upper end." This language is in accordance with the definition of rim in Claim 1.

Relying upon the prosecution histories of the various patent applications relating to the '213 and '360 patents, Foster Grant develops a "file wrapper estoppel" argument. In support of its estoppel argument, Foster Grant alludes to the original speci-

cation. Reference to the specification is irrelevant, since it is the claims of the '213 patent which are in issue.

Foster Grant also refers to the C. I. P. application (PX-7) and to the rim stacking embodiments of Fig. 21. However, any reference to this embodiment, which was specifically deleted by ITW's attorneys in accordance with the Rules of the Patent Office, is irrelevant.

Similarly, Foster Grant's analysis of the prosecution history of the C. I. P. specification (PX-7) which matured into the '360 patent is irrelevant. The prosecution history leading to the allowance of different claims in the '360 patent is also irrelevant to the scope of the claims in the '213 patent.

Foster Grant also relies upon the prosecution history of the '213 patent (PX-6) and suggests that Claim 1 was allowed only because the pending claim was amended to add the "rim" element and the "stacking ring means . . . positioned below and spaced axially from said upper rim." Actually, by the final amendment, the claim was "amended" in a variety of ways, not in the single way suggested by Foster Grant, and further, the claim was amended to distinguish over all of the references previously cited by the Patent Office, not to distinguish solely over the Aldington patent as suggested by Foster Grant.

Under the remarks in the final amendment, ITW's attorneys flatly stated "This amendment is being submitted after careful consideration of the newly cited patent to Aldington and after a very careful review of all of the references of record in this application."

The Court finds no file wrapper estoppel which prevents the asserted claims from being infringed by Foster Grant's current commercial cups.

Foster Grant's witness, Mr. Johnson's contention is that the Foster Grant cup "chairman" (PX-63A-1) does not have an "intermediate section of the stacking means inclined inwardly and upwardly" to provide a "Z" configuration (R. 2119-20).

This contention is apparently premised on Foster Grant's use of an "S"-shaped stacking ring. However, the "S"-shaped stacking ring does embody the "Z" characteristic (configuration) as defined by the claim itself.

The pertinent claim language applies to Foster Grant's current commercial cup. The intermediate section does have at its lower extremity "internal shoulder means." The intermediate section is "inclined inwardly and upwardly . . . to provide a thin wall resilient support. . . ."

The language of Claim 1, on its face, is broad enough to cover either Z-shaped or S-shaped supports for the internal shoulder means. The claim calls for the "support converging toward the cup axis from bottom to top sufficiently to increase lateral strength of the stacking ring means and to increase radial extent of the internal shoulder means." This claim language responds to the intermediate support in Foster Grant's current cup that must and does converge toward the cup axis to perform the desired function of increasing lateral strength and radial extent. Foster Grant's current cup (PX-63) has an S-shaped stacker embodying the Z-characteristic specifically defined in Claim 1.

Further, the intermediate section of the Foster Grant current commercial cup is generally or substantially "inclined inwardly and upwardly toward the cup axis." The intermediate section in the stacking ring in the Foster Grant cup has, immediately above the lower shoulder: first, a generally vertical portion; then an inwardly and upwardly inclined portion; then a vertical portion which joins the upper shoulder means.

Foster Grant contends that, under the patent in suit, the intermediate section of the stacking ring must be "more resilient than [that of] the container" (R. 2132) or the claimed stacking devices to "be more resilient than other stacking devices." (R. 2132) There is nothing in Claim 1 requiring the intermediate section to be "more resilient" than either the container or any other stacking device.

Finally, the contention that the intermediate section is not "inclined inwardly and upwardly" is without merit. The Foster Grant cup "chairman" (PX-63A-1) has an intermediate section "inclined inwardly and upwardly."

Foster Grant's current commercial cup group (PX-63) infringes Claim 1 of the '213 patent.

Foster Grant contends that Claims 5, 6, 8 and 9 of the '213 patent are not infringed, because at least one of the shoulder means is not "adapted for camming engagement" and does not "enhance axial resiliency to a stack. . . ." Foster Grant contends that none of the Foster Grant current commercial cups "had the characteristics, in compression, of the various ITW containers. . . ." This is not the test. On the contrary, the test is whether the accused cups have the claimed "camming engagement" and "axial resiliency".

On this point, the evidence demonstrates that the Foster Grant current commercial cups had camming action, their stacks compressed in response to axial forces, and were axially resilient (R. 2348, 2553-56, 2626-27, 2633). Moreover, in Foster Grant's patent (PX-98), it is admitted that when "nested containers are compressed in an axial direction, an appreciable amount of 'give' or resiliency is present due to the sliding of adjacent containers" (Col. 4, l. 39-41). Whether these Foster Grant cups have more or less camming engagement or more or less axial resilience than other cups is irrelevant.

In regard to Claims 8 and 9, Foster Grant challenges both claims, on the ground that the stacking ring in the current commercial cups cannot be "sinuous" (Claim 8) and its shoulder be a "straight line" (Claim 9). This misconstrues the language of Claim 9, since Claim 9 calls for the shoulder presenting a "substantially straight line", not a straight line. Both Claims 8 and 9 can be asserted without any inconsistency.

Further, the cross-section of the stacking ring in Foster Grant's current commercial cups is "sinuous", as called for by Claim 8,

and the shoulder means are each "a substantially straight line".

Foster Grant's current commercial cup group (PX-63) infringes Claims 5, 6, 8 and 9 of the '213 patent, and there is a real identity of means, operation, and result between the asserted claims of the '213 patent and the PX-63 cup group.

VIII. *Foster Grant Infringes the '360 Patent.*

ITW charges that all of Foster Grant's cups having interrupted Z-shaped stacking rings, represented by the PX-74 and PX-75 cup groups, infringe one or more of the asserted Claims 1 and 3 of the '360 patent.

The Wilson-Champion cup is represented by the PX-74 cup group (no longer in commercial production). This PX-74 cup group, in turn, is represented by its "chairman", the Wilson-Champion 12-ounce cup (PX-74A). This cup "chairman" (PX-74A, like each member of this PX-74 cup group, has an interrupted Z-shaped stacking ring located immediately below the upper margin in the sidewall.

ITW's claim chart PX-79A (in PX-82) shows how the elements of Claim 1 of the '360 patent read on the Fig. 1 embodiment in the '360 patent (R. 669-75). ITW further introduced claim chart PX-80A (in PX-82) which demonstrates how the elements of Claim 1 of the '360 patent apply to the Wilson-Champion cup "chairman" (PX-74A) (R. 714-15). This same claim chart, PX-80A, shows how the stacking ring element of Claim 1 reads on the stacking ring embodied in the Wilson-Champion cup "chairman" (PX-74A) (R. 715-16).¹

1. ITW's infringement charge for the '360 patent is as follows:

Foster Grant Cups	Exhibits	'360 Claims Infringed
Wil-Champ. 12 oz.	(PX-74-1, TDX-70)	1 and 3
Wil-Champ. 16 oz.	(PX-74B-1, TDX-2)	1 and 3

(Continued on next page)

I find that each of the asserted claims reads on and is infringed by the Wilson-Champion cup "chairman" (PX-74A) (R. 716-19).

With respect to the Wilson-Champion cup group (PX-74), there is an identity of means, operation and result between the asserted claims of the '360 patent and the PX-74 cup group. The asserted claims of the '360 patent are infringed by the PX-74 cup group.

Foster Grant has asserted a Statute of Limitations defense under 35 U. S. C. 286. ITW contends that this six-year Statute of Limitations is not applicable, since ITW has asserted, by the filing of its complaint in 1969, that the Wilson-Champion cups were infringements. Although the complaint at that time did not charge Foster Grant with infringement of the '360 patent, it did, based on the information known to ITW at that time, charge Foster Grant with infringement of the '213 patent.

Rule 15(c) of the Federal Rules of Civil Procedure states that an amended pleading "relates back to the date of the original pleading" "whenever the claim or defense asserted in the amended pleading arose out of the same conduct, transaction, or occurrence set forth or attempted to be set forth in the original pleading." This rule does not apply here. An alleged infringement of one patent is not the "same conduct, transaction or occurrence" as the alleged infringement of another patent. The statute of limitations applies to and bars ITW from recovering for the infringement of Claims 1 and 3 of the '360 patent resulting from the manufacture and sale of the above-described Wilson-Champion cups.

(Continued from preceding page)

Wil-Champ. 8 oz.	(PX-74C-2, TDX-202)	1 and 3
Wil-Champ. 32 oz.	(PX-74D-2, TDX-204)	1 and 3
Fos. Gr. 16 SWV	(PX-75A-1, TDX-402)	1 and 3
Fos. Gr. 16 SU	(PX-75B-1, TDX-159)	1 and 3
Fos. Gr. 20 PB	(PX-75C-1, TDX-296)	1 and 3
Fos. Gr. 24 TB	(PX-75D-1, TDX-161)	1 and 3

B. The Foster Grant Current Commercial Cup and the PX-75 Cup Group.

The Foster Grant current commercial cup is represented by the PX-75 cup group. This PX-75 cup group, in turn, is represented by its "chairman", the Foster Grant 16SWV cup (PX-75A). This cup "chairman" (PX-75A), like each member of the PX-75 cup group, has an interrupted Z-shaped stacking ring located immediately below the upper margin in the sidewall.¹

ITW's Edwards prepared claim chart PX-81A (in PX-82) which shows how the elements of Claim 1 of the '360 patent read on the Foster Grant current commercial 16SWV cup "chairman" (PX-75A) (R. 685-86). This claim chart PX-81A (in PX-82) shows how the stacking ring element applies to the stacking ring element embodied in the Foster Grant current commercial cup "chairman" (R. 685-91). Edwards further recited how Claim 1 applies both structurally and functionally to Foster Grant's "chairman" (R. 685-91). In this connection, Edwards identified the interruptions in the interrupted stacking ring in this "chairman" (PX-75A-4) (R. 692), and discussed manometer air communication test he had conducted.²

He confirmed that the interrupted stacking ring in the Foster Grant current commercial 16 SWV cup "chairman": (1) performed its intended shock absorbing and jab prevention function, and (2) provided air communication between adjacent cups in accordance with the interrupted characteristics of the '360 patent (PX-105) (R. 692-711). Edwards also testified how each of the asserted claims reads on and is infringed by

1. Two sets of three current commercial 16 SWV cups (PX-75-A) partially sectioned are identified as PX-77A and C, photographs being respectively identified as PX-77B and D (in PX-78).

2. On the 16 SWV cup (PX-75A), the 16 SU cup (PX-75B), and 20 PB cup (PX-75C), and the 12 S cup (PX-63A) (PX-105) (R. 692-711).

Foster Grant's cup "chairman" (PX-75A-1) (R. 711-14).¹ The Court concurs in and adopts these conclusions of Edwards.

The Foster Grant current commercial cup group (PX-75) infringes claim 1 of the '360 patent. Dependent claim 3 reads on and is infringed by the current commercial cup group (PX-75).

With respect to the Foster Grant current commercial cup group (PX-75), there is a real identity of means, operation and result between the asserted claims of the '360 patent and the PX-75 cup group. The asserted claims of the '360 patent are clearly infringed by the PX-75 cup group.

IX. Foster Grant Infringes the '139 Patent.

ITW charges that all of Foster Grant's packages (represented by the Wilson-Dow cup "chairman" and associated lid, the Wilson-Champion cup "chairman" and associated lid, the Wilson-Foster Grant cup "chairman" and associated lid, and the Foster Grant current commercial cup "chairman" and associated lids), infringe one or more of the asserted claims 1, 2, 6 and 7 of the '139 patent.²

The Wilson-Dow, Wilson-Champion, and Wilson-Foster Grant packages are represented by their respective cup "chairmen" (PX-61A, PX-74A, and PX-62A) and their associated lids (PX-84 or 85). Because of the unavailability of lids, Ed-

1. Edwards also recited how each of the asserted claims applies to the Foster Grant current commercial 16 SU cup (PX-75B-1), the 20PB cup ((PX-75C-1), and the 24TB (PX-75D-1), the other members of this cup group (R. 711-14).

2. The Wilson-Dow package comprises the Wilson-Dow cup "chairman" (PX-61A) and its associated lid exemplified by PX-84. The Wilson-Champion package comprises the Wilson-Champion cup "chairman" (PX-74A), and associated lid exemplified by PX-85. The Wilson-Foster Grant package comprises the Wilson-Foster Grant cup "chairman" (PX-62A) and associated lid exemplified by PX-85. The Foster Grant current commercial package comprises either the Foster Grant 12S cup "chairman" (PX-63A) or the Foster Grant 16SWV cup "chairman" (PX-75A), as used with one or more of the following lids: L-142 (PX-86A), L-171 (PX-86B), 882-1 (PX-86C), L-131 (PX-86D), and L-161 (PX-86E).

wards relied upon the lid drawings PX-84 and 85 to make drawing of the above packages.

Foster Grant points out that there was some confusion as to the specific lid, including dimensional details, that was used with the Wilson-Dow, Wilson Champion, and Wilson-Foster Grant packages.

Nevertheless, Thomas Eyles, Foster Grant's designer, testified that lids of the same configuration as that shown in PX-85 were used in all of the early containers (PX-104B, pp. 110-11). It is clear that the lids shown in PC-88, PX-89 and PX-90 conform to that general configuration.

Edwards prepared claim chart PX-94 (in PX-97) which shows how the elements of Claim 1 of the '139 patent read on the Fig. 1 embodiment of the '139 patent and on the Wilson-Dow package (R. 782-74). Edwards further prepared claim chart PX-95 (in PX-97) which shows how the elements of Claim 1 of the '139 patent read on the Wilson-Champion and Wilson-Foster Grant package (R. 789-91). These claims charts PX-94 and 95 demonstrate how the sealing means portions and integral combination holding and venting means portion of Claim 1 read on the comparable structure in these Wilson-Dow, Wilson-Champion, and Wilson-Foster Grant packages (R. 789-91). The Court adopts these conclusions and finds that the Wilson-Dow package infringes asserted claims 1, 2, 6 and 7 of the '139 patent and that the Wilson-Champion and Wilson-Foster Grant packages infringe claims 1, 2, and 6 of the '139 patent (R. 786-89, 792-94).

There is an identity of means, operation and result between the asserted claims of the '139 patent and the Wilson-Dow, Wilson-Champion and Wilson-Foster Grant package groups. The asserted claims of the '139 patent are infringed by the Wilson-Dow, Wilson-Champion and Wilson-Foster Grant package groups.

The Foster Grant current commercial packages are represented by the Foster Grant current commercial 12S cup "chair-

man" (PX-63A-1) and its associated lid and the Foster Grant current commercial 16 SWV cup "chairman" (PX-75A-1), (except 20 PB and 24TB), and its associated lid. The 12S and 16SWV cup "chairmen" (PX-63A-1 and PX-74A-1) with their associated lids are deemed to be representative of the various cups and associated lids within their respective groups.

Edwards prepared claim chart PX-96A (in PX-97) which shows how the elements of Claim 1 of the '139 patent read on each of the Foster Grant current commercial packages (R. 761-62). This claim chart PX-96A demonstrates how the sealing means portions and integral combination holding and venting means portion of Claim 1 read on the comparable structure in these Foster Grant current commercial packages (R. 761-62).

Edwards further recited how Claim 1 applies both structurally and functionally to the Foster Grant current commercial packages (R. 762-66). In this connection, Edwards testified that his manometer test (PX-105) established that the accused packages would "seal, vent, and reseal" (R. 767-78). Edwards explained that when a lid was placed on the cup "chairman", the reading of the manometer increased, thereby indicating that the package "sealed". In response to the application of air to package, the manometer reading gradually increased until it reached a predetermined level, which indicated "venting". Thereafter the manometer reached a final value, which indicated that it has "resealed". (R. 767-78). Edwards also testified how the asserted claims 1, 2 and 6 are infringed by the Foster Grant current commercial packages (R. 780-82). The Court concurs in and adopts Edwards' conclusions.

Foster Grant asserts that its package is designed to avoid trapped air. This contention is not controlling as to whether the Foster Grant package infringes the '139 claims.

The sole inquiry is whether the Foster Grant package embodies the Edwards invention (e.g., sealing, venting, and resealing). The fact that the accused structure performs functions

in addition to that performed by the patented structure will not avoid infringement.

The Foster Grant package has the Edwards capability of sealing, venting and resealing (R. 2561-62). Furthermore, in Foster Grant's patent (PX-98), it is admitted that the ribs 34 provide "for venting of the container during application of a closure and for allowing gases to escape, if any are generated by the contents during storage (Col. 4, ll. 19-22). Foster Grant cannot now contend that only the first purpose (i.e., avoiding trapped air) is achieved.

Foster Grant asserts that it does not infringe the asserted claims because it neither makes, uses, nor sells "packages". The Court disagrees. Foster Grant is selling both cups and lids (both imprinted with its customer's name and cottage cheese designation) to its customers who, with the blessing of Foster Grant, form the "packages" in the United States. Foster Grant manufactures its cups and lids for the specific purpose of selling them to its customers. Foster Grant has no internal organization for packing cottage cheese in its cups and lids, and thus manufactures them "to order" for its customers (R. 2560-61). In addition, it provides the required customer service to ensure proper use of the Foster Grant cups and lids for the packing of cottage cheese (R. 1968, 2561). In every pertinent sense, Foster Grant has contemplated the use of its products as a package and has aided in the assembly.

Foster Grant's accused packages in their intended environment of use, namely, for packaging cottage cheese, embody the structure defined by the asserted claims and, thus, are infringing devices. That Foster Grant's accused packages were designed for use with, and actually have been used for, packaging cottage cheese and similar dairy products has been fully established in the record (PX-98, Col 1, lines 26-28, R. 2561).

A further Foster Grant non-infringement position is that its current commercial package does not have both "a portion offset radially outwardly . . ." (i.e., a groove) and "an integral combi-

nation holding and venting means portion adapted to be associated with said radially offset portion. . . ." Foster Grant admits that its package has a "portion . . . offset radially outwardly . . ." (i.e., a groove), but denies that it has the integral combination holding and venting means portion that cooperates with "the radially offset portion".

This conclusion depends upon reading the "integral combination holding and venting means portion" solely on "a slot or hole". I conclude that the integral combination holding and venting means portion directly reads on both "slot or hole" and the inwardly extending portion (i.e., the barb) (R. 761-62). The slots in the cup coact with, cooperate with, and are "associated with" the groove in the cup.

Foster Grant concludes its non-infringement argument by relying on alleged "new evidence", and then seeks to avoid infringement by again emphasizing that its packages are designed to prevent air entrapment. The "new evidence" is not persuasive. In any event, Foster Grant's contention that its packages "are designed to prevent air entrapment", is not controlling.

The Edwards invention was designed to prevent popping lids by relieving internal pressure buildup. The defendant has established reason to doubt that such pressure is caused by gasses emanating from cottage cheese, as Edwards believed. The asserted claims do not require that the pressure buildup be due to gas generation. The pressure relieving means is the invention and the source of the pressure is not crucial to patent validity. The important fact is that the packages do vent in the manner specified by the '139 patent (R. 2561-62).

The Foster Grant current commercial packages infringe asserted claims 1, 2, and 6 of the '139 patent.

There is an identity of means, operation and result between the asserted claims of the '139 patent and the Foster Grant current commercial packages. The asserted claims of the '139

patent are infringed by the Foster Grant current commercial packages.

Foster Grant denies that the issues of infringement under 35 U. S. C. 271(b) and (c) are present in this case. The complaint in this case alleges that Foster Grant "infringes" certain claims of the '139 patent. This case is not limited to infringement under 35 U. S. C. 271(a). Section 271 is entitled "Infringement of patent" and includes four subsections. Consequently, ITW's charge of infringement is not limited to any particular subsection and subsections (a)-(d) have been adequately pleaded.

As has been discussed above, Foster Grant directly infringes the '139 patent under 35 U. S. C. 271(a). In addition, ITW contends that Foster Grant is liable under 35 U. S. C. 271(b) and (c). Foster Grant, in effect, denies that it sells packages in the United States and relies on the doctrine set forth in *Deepsouth Packaging Co. v. Litram Corp.*, 406 U. S. 518 (1972) which establishes that there must be infringement in the United States in order to find liability as a contributory infringer.

The Court finds from the evidence that Foster Grant does sell its current commercial packages in the United States. No evidence was presented to show that any sales, much less all sales, were in foreign countries and Foster Grant has failed to establish those facts that would bring this case within the scope of the *Deepsouth* case, *supra*. At trial, it was implicit in all of the testimony that the events testified to occurred in the United States.

The evidence at trial established Foster Grant's knowledge of the '139 patent (PX-104B, pp. 2-23, 2-24, 2-47, R. 2964) shortly after its issuance, and that Foster Grant's current commercial lids and containers are routinely purchased together by the customer (R. 2560), and are imprinted with customer and product identification (R. 2560). It was further established that these lids and containers are assembled into packages containing cottage cheese by Foster Grant's customers, and Foster Grant knew of these activities (R. 2561). Furthermore, it is

clear that these packages vent after capping in the manner of the '139 patent (R. 2561-62). It was also demonstrated that the early forms of Foster Grant packages, Wilson-Dow, Wilson-Champion packages, and Wilson-Foster Grant packages, sealed, vented, and resealed as called for by the '139 patent (PX-104B, pp. 76, 116, 2-27, 2-28), and that these packages infringe the '139 patent.

Foster Grant contends that in the dry condition, its accused packages do not infringe. The evidence demonstrates that the normal intended use for Foster Grant's packages is to package dairy products. In fact, there is no evidence of any substantial non-infringing commercial use of its current packages.

Foster Grant's sale of the accused containers and lids, coupled with its knowledge of both the infringing intended use and the '139 patent, establishes liability for inducing infringement under 35 U. S. C. 271(b) and for contributory infringement under 35 U. S. C. 271(c).

X. Foster Grant's Infringement Is Not Such as to Justify an Award of Treble Damages and Attorney Fees.

The record is clear that Foster Grant inspected and analyzed ITW's patented cups prior to its entry into the plastic cup field. The record is equally clear that Foster Grant successively learned about (a) the issuance of the '139 patent, (b) the issuance of the '360 patent, (c) the issuance of the '213 patent, (d) the *ITW v. CCC* District Court decision, (e) the *ITW v. CCC* Court of Appeals decision, (f) the *ITW v. Sweetheart* District Court decision, and (g) the *ITW v. Sweetheart* Court of Appeals decision.

The evidence demonstrates that Foster Grant, though aware of the patent claims and the patent litigation of ITW at all relevant times, may have believed that putting the venting means in the container rather than the lid avoided the application of the '139 patent. Additionally, Foster Grant explains its disregard for ITW's patent rights by asserting that it was licensed

under the '213 patent or that it thought it was so licensed. Such a belief was not founded in fact, though it is possible that some employees at some time may have entertained it in good faith. It is significant that no Foster Grant personnel testified at trial as to the existence of such a license or even as to their "belief" that Foster Grant was in fact licensed under the '213 patent, and the license defense must be deemed unproved. But it remains, nonetheless, relevant to the issue of Foster Grant's good faith.

Foster Grant asserts that it believed that the "patents were totally invalid." Despite the error of this belief, the evidence does not controvert the contention that it was held by Foster Grant's decision makers in good faith.

For the reasons advanced above, Foster Grant is not guilty of wilful and wanton infringement and/or of reprehensible conduct. An award of treble damages and attorney fees is not appropriate under 35 U. S. C. 284, 285, and is denied.

XI. The Edwards' '213, '360 and '139 Patents Are Valid.

A. Edwards' Patents Are Presumed Valid Under the Statute.

The burden of establishing invalidity of a patent rests heavily on a defendant. The statutory presumption of validity of a patent is not to be overthrown except by clear and cogent evidence.

The presumption of validity arising from the grant of a patent is strengthened where, as here, the invention was useful, and answered a need in the industry.

The presumption of validity is additionally strengthened where the prior art relied upon by Foster Grant is the same as and no better than that considered and rejected by the experts of the Patent Office.

Furthermore, where the principal art relied upon by Foster Grant is the same as or no better than the art considered and

rejected by the District Court and Court of Appeals in *ITW v. Continental Can Company* (involving the '213 and '139 patents), *ITW v. Sweetheart Plastics Co.*, (involving the '213 and '360 patents), and *ITW v. Solo Cup Co.* (involving the '213 and '360 patents), the defendant has the burden of presenting "persuasive new evidence" of invalidity. Therefore, the presumption of patent validity, under 35 U. S. C. 282, is entitled to even greater weight.

The "law of the circuit" rule of the Seventh Circuit is established in *American Photocopy Equipment Co. v. Rovico*, 384 F. 2d 813, 155 U. S. P. Q. 119 (7th Cir., 1951), cert. denied, 390 U. S. 945. If there is no new evidence of invalidity, the District Court will follow its Court of Appeals decisions based on the same evidence. However, notwithstanding the *Rovico* rule, this Court has considered the evidence "de novo", i.e., independently from and without reliance upon the prior ITW decisions, and in addition, has considered some new evidence which it has found unpersuasive.

B. Relationship of '213 and '360 Patents.

The '213 patent (PX-2), although based in part on the earlier filed original application (Ser. No. 699,678, filed November 29, 1957) (PX-5), actually issued on June 30, 1964, about one year after the '360 patent. The subject matter of both the '213 and '360 patents was disclosed in the continuation-in-part application, Ser. No. 679,057, filed October 29, 1958 (PX-7), and the '213 patent matured from an application divided out of this application, Ser. No. 697,057 (PX-6). This application then issued as the '360 patent (PX-3).

The application (PX-6) from which the '213 patent matured was divided out of the C. I. P. application (PX-7) in response to a requirement for restriction made by the U. S. Patent Office Examiner. Accordingly, even though the '360 patented invention issued as an improvement over the '213 patented invention, these patented inventions stand on the same footing with

respect to the prior art, and each enjoys the benefit of everything common to both, for example, the Z-shaped stacking configuration in the sidewall below the rim with all of its beneficial attributes.

In considering the validity of each of the '213 and '360 patents, neither patent may be used as a prior art reference against the other. 35 U. S. C. 121 specifically states that this rule of law applies where one of two co-pending applications ('213 application) is a division of the other ('360 application) filed by the same inventor, where a restriction requirement is made by the Patent Office.

Thus, in this Court's consideration of the validity of the '213 and '360 patents, each must be considered individually in the context of the prior art, and not in the context of the other. Under the statute (35 U. S. C. 121), the claims of the two patents in suit must be considered with respect to each other in the same manner as one considers the claims of a single patent with respect to each other.

One of Foster Grant's invalidity defenses is based on Continental Can's early plastic containers having double stackers. Thus Foster Grant contends that Claim 1 of the '213 patent and Claim 1 of the '360 patent read on more than one stacking ring—notwithstanding the fact that the drawing, specifications, and clear language of Claim 1 of both patents establishes that only a single stacking ring is called for by these claims. In Claim 1 of both patents, the stacking ring means is defined as including an intermediate support section having at its lower extremity, "externally projecting shoulder means" and having at its upper extremity "internal shoulder means." In addition, the "internal shoulder means" is defined as being "adapted to form a shelf to coact with the complementary external shoulder means of a like container. . . ."

Thus, the "internal shoulder means" at the upper extremity of the intermediate section of a lower container must form a shelf to coact with the complementary "external shoulder means"

at the lower extremity of the intermediate section of an upper container. This excludes a double stacker, because in a double stacker, the internal shoulder means (as the upper extremity of the intermediate section) of a lower container would coact with the middle shoulder means of an upper container and not the defined external shoulder means at the lower extremity of the intermediate section of the upper container. Claim 1 of the '213 and '360 patents defines a single stacking ring only (R. 677, 2989).

As is treated fully above, the claims, drawings and specifications of the '213 and '360 patents clearly establish that a single stacking ring is called for by the claims. Thus, Foster Grant's contention that the '213 and '360 patents are not limited to a single stacking ring is without merit.

In contesting the validity of the '213 and '360 Edwards patents, Foster Grant relies upon (1) Continental Can's experimental developments, and (2) prior art patents and publications. However, neither the prior experimental developments nor the prior art patents and publications disclose or teach the subject matter defined by the asserted claims of the '213 and '360 patents in suit. Therefore, Foster Grant has not proven any "anticipation" under 35 U. S. C. 102.

With respect to Foster Grant's own developmental activity, no cups were produced until 1962 (PX-103). This activity is long after the development of Edwards '213 and '360 inventions in 1957 and 1958 respectively (PX-21, PX-29, PX-35, PX-36; R. 471-75, 487-93, 508-10). Thus, none of Foster Grant's activities can be considered "prior art" and cannot be an "anticipation" under 35 U. S. C. 102.

With respect to Continental Can's experimental developments, they were not prior art and/or were not "anticipations" (35 U. S. C. 102) of or did not render obvious (35 U. S. C. 103) the '213 and '360 inventions.

In contesting the validity of the '139 patent, Foster Grant relies upon (a) an alleged development of Kent Plastics Co. and

(b) prior art patents. None of these is more pertinent than the prior art which has been considered by the Patent Office.

No doctrine of the patent law is better established than that a prior patent or publication, to be an anticipation, must bear within its four corners adequate directions for the practice of the patented invention. Thus, under the authorities, Foster Grant has not established that the asserted claims in the '213, '360 and '139 patents are "anticipated" under 35 U. S. C. 102.

Edwards' inventions are the products of inventive faculties and are not obvious under 35 U. S. C. 103. The proof of "non-obviousness" is that none of the prior art patents or structures, which Foster Grant has developed by its extensive search of the prior art, discloses the Edwards nestable container inventions, i.e., a one-piece, nestable, thin-wall, plastic container having the claimed bottom, the claimed sidewall, the claimed rim, and a circumferential stacking ring in the sidewall below the rim having either a continuous or an interrupted Z-shaped configuration—which is the structure defined by the asserted claims of the '213 and '360 patents.

With respect to the '139 invention, the proof of non-obviousness is that Foster Grant has failed to locate a prior art patent structure that discloses or teaches the Edwards '139 invention. Edwards succeeded where others failed and the failure of others having at least ordinary skill in the art is compelling evidence of nonobviousness.

The test of obviousness must be applied in the context of the circumstances that existed when Edwards made his nestable container inventions in June, 1957 and June, 1958, and not in the context of today's technology and not with the full benefit of the teachings of the '213 and '360 patents. The same is true for the '139 patent. Further, the exceptional commercial success of the Edwards' inventions, although a secondary factor, is evidence of the "nonobviousness" of Edwards' inventions defined by the asserted claims of the '213, '360 and '139 patents.

Foster Grant has challenged the claimed '213 conception date. This is pertinent because of the Continental Can 7AB-Special cup. The Court finds that this Continental Can cup was not developed until after Edwards made the '213 invention and, as such, is not prior art with respect to the '213 patent. I find that Continental Can was involved in the late 1950's in an experimental program of attempting to design a plastic vending cup, a plastic food container, and a plastic ice cream container. Some of the experimental designs were mere proposals, some never went beyond the drawing stage, most never went beyond the laboratory state (and were actually unsuccessful efforts or abandoned experiments), and a few were manufactured in limited quantities and apparently were distributed upon an experimental basis in limited numbers to few Continental Can customers who found them to be unacceptable. None of these was a successful container embodying either of the Edwards inventions.

These Continental Can cups or containers are not prior art, and are no more than unsuccessful developmental efforts and/or abandoned experiments. The results of this continuous activity caused the entire plastic program at Continental Can to be abandoned and discontinued. As such, none of the Continental Can efforts have any prior art status.

Foster Grant relies on a great number of tests run by Mr. Johnson on simulated, alleged prior art Continental Can containers and on post-Edwards commercial containers. None of the containers tested was available in 1957, 1958, or before (R. 2178). With respect to the recently fabricated alleged prior art Continental Can cups, they were manufactured from material that was not available in 1957-58, on machinery that was not available in 1957-58, and by thermoforming processes not used in 1957-58 (R. 2221).

Specifically, Johnson, Foster Grant's expert, admitted on cross-examination that there was no attempt to duplicate the process variables, such as sheet thickness (R. 2283), plug design

(R. 2284-87, 2291-94), and plug temperature (R. 2288-90, 2293-94) which were actually used to make the alleged prior art cups. Johnson also admitted that the selection of these variables alters the construction and performance of a cup or container (R. 2294-95). These tests were all made on cups and containers manufactured by today's technology. The mission of this Court is to determine the prior art "at the time the invention was made", 35 U.S.C. 103. The advance in technology since 1957 and 1958 cannot be denied and demonstrating what can be achieved with today's technology does not shed any light on what was possible with the technology existing when Edwards made the '213 and '360 inventions. Consequently, these "after the fact" tests conducted by Foster Grant for the purpose of this lawsuit have limited probative value.

For the foregoing reasons, the asserted claims of the '213 and '360 patents define a patentable combination, not an old combination. These claims are valid and Foster Grant's "old combination" argument is without merit.

The patents (DX-281) and prior devices suggested by Foster Grant taken individually, or in any combination, do not anticipate (35 U.S.C. 102) or render obvious (35 U.S.C. 103) the '213 invention or the '360 invention.

Having analyzed the scope and content of the prior art, the differences between the prior art and the asserted claims of the '213 patent and '360 patent, it is concluded that the inventions set forth in the asserted claims would not have been obvious to one having ordinary skill in the art at the time the invention was made.

Foster Grant relies upon an alleged development of Kent Plastics Corp. and several prior art patents against the '139 patent in suit. However, the proofs are not sufficient to meet Foster Grant's burden of showing that the Kent development preceded the '139 invention and the Kent Plastics package is different from the '139 Edwards invention in both structure and function and neither anticipates nor renders obvious the '139 invention.

The Kent Plastics package, the Hydro-Chemie container, and the relied-upon patents (DX-345), taken individually or in any combination, do not anticipate (35 U.S.C. 102) nor render obvious (35 U.S.C. 103) the '139 invention.

None of the newly-cited patents is as pertinent as those which have been previously considered, and Foster Grant's contention that the patented prior art invalidates the '139 patent is without merit.

Having analyzed the scope and content of the prior art, the differences between the prior art and the asserted claims of the '139 patent, it is concluded that the invention set forth in the asserted claims would not have been obvious to one having ordinary skill in the art at the time the invention was made.

XII. *Foster Grant's Other Defenses.*

I find that the '213 patent is not invalid for double patenting and that the '213 and '360 patents are not invalid under 35 U.S.C. 112 (¶ 2). Neither are the '213 and '360 patents invalid under 35 U.S.C. 112 (¶ 1). I find that the '139 patent was not obtained under false pretenses.

The '139 invention solves the lid popping problem due to pressure increases from any source, e.g., temperature rise, atmospheric pressure decrease, weight of stacked packages, and impact of forces caused by bouncing packages during transit (R. 339-40, 345, 528, 900, 937-38). The probability that cottage cheese does not generate gas is not controlling.

The testimony is in conflict over whether or not ITW ever saw the Hydro-Chemie container. Mr. Hartmann of Owens-Illinois stated that it was not shown to ITW representatives in the meetings between Owens-Illinois and ITW (DX-309, pp. 33, 39). It is not certain from the evidence that ITW can be charged with knowledge of the alleged container even as late as 1969.

In any event, the Hydro-Chemie container neither anticipates (35 U.S.C. 102) nor renders obvious (35 U.S.C. 103) the '139 invention.

XIII. *ITW Is Not Guilty of Misuse.*

Foster Grant asserts that ITW is attempting to restrict the sale of containers per se by its assertion of the '139 patent. ITW contends it is only asserting the "package" claims of the '139 patent against Foster Grant's manufacture and sale of its lid and containers which comprise self-venting packages (35 U.S.C. 271 (a)(b)(c)).

Foster Grant basis its misuse defense on the assertion that ITW's customers "get an implied, royalty-free license to make the patented 'self-venting package' (R. 2484, 2485)."

Title 35, Section 271(d) provides:

"(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which, if performed by another without his consent, would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which, if performed without his consent, would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement."

It is clear that by virtue of Section 271, a patentee who sells a complete combination can bring an action against a contributory infringer, and such bringing of a suit is not in itself a misuse of the patent monopoly.

Foster Grant presents allegations of either positive misrepresentations or the withholding of certain facts from the Patent Office and/or the Courts as a basis for asserting an "unclean hands" defense.

The gasification of cottage cheese has been fully treated above. The evidence establishes that ITW believed that cottage cheese

does generate gas and no evidence was presented to suggest that ITW felt differently before or during the prosecution of the '139 patent. Thus this contention of an alleged misrepresentation is without foundation.

I do not find from the evidence that there has been patent misuse, or unclean hands, and this Court finds that the '213, '360 and '139 patents are each fully enforceable.

CONCLUSIONS OF LAW.

This Court has jurisdiction over the parties and over the subject matter of this suit. Venue is properly laid in this District.

ITW has title to United States Letters Patents Nos. 3,139,213; 3,091,360 and 3,061,139 and is the owner of all rights thereunder, including the rights to sue for and recover for past infringement.

ITW has maintained its burden of proving the essential facts alleged in its complaint. Foster Grant has not maintained the burden of proving the essential facts of any of its affirmative defenses and Foster Grant has not maintained the burden of proving the essential facts alleged in its counterclaim.

United States Letters Patent No. 3,139,213, entitled "Nestable Cup", as to Claims 1, 2, 3, 5, 6, 7, 8 and 9 in all respects valid and subsisting in law.

United States Letters Patent No. 3,139,213 as to Claims 1, 2, 3, 5, 6, 7, 8 and 9 is infringed by Foster Grant by its manufacture and sale of its accused containers.

United States Letters Patent No. 3,091,360, entitled "Nestable Cup", as to Claims 1 and 3, is in all respects valid and subsisting in law.

United States Letters Patent No. 3,091,360, as to Claims 1 and 3 is infringed by Foster Grant by its manufacture and sale of its accused containers.

United States Letters Patent No. 3,061,139, entitled "Self-Venting Package", as to Claims 1, 2, 6 and 7, is in all respects valid and subsisting in law.

United States Letters Patent No. 3,061,139, as to Claims 1, 2, 6 and 7 is infringed by Foster Grant by its manufacture and sale of its accused packages.

ITW has not been guilty of patent misuse or unclean hands, and United States Letters Patent Nos. 3,139,213, 3,091,360 and 3,061,139 are each enforceable.

ITW is entitled to an injunction restraining Foster Grant against further infringement of United States Letters Patent No. 3,139,213, as to Claims 1, 2, 3, 5, 6, 7, 8 and 9.

ITW is entitled to an injunction restraining Foster Grant against further infringement of United States Letters Patent No. 3,091,360, as to Claims 1 and 3.

ITW is entitled to an injunction restraining Foster Grant against further infringement of United States Letters Patent No. 3,061,139, as to Claims 1, 2, 6 and 7.

ITW is entitled to an accounting by this Court to determine the amount and extent of damages, and the cause is continued as to the accounting issues, pursuant to Rule 42 of the Federal Rules of Civil Procedure.

ENTER:

/s/ FRANK J. MCGARR,
United States District Judge.

Dated: March 4, 1974.

IN THE UNITED STATES DISTRICT COURT
for the Northern District of Illinois
Eastern Division

• • (Caption—69 C 481) • •

JUDGMENT ORDER.

This cause having come on to be heard on plaintiff's complaint, on defendant's answer and counterclaim to complaint, and on plaintiff's reply to counterclaim, and the Court having heard the testimony of the witnesses for the respective parties in open court and having examined the depositions made of record, the exhibits received in evidence, and the briefs of the respective parties, and the Court having this day filed its Findings of Fact and Conclusions of Law pursuant to Rule 52 of the Federal Rules of Civil Procedure, which Findings of Fact and Conclusions of Law stand as the Court's Memorandum of Decision, it is hereby ordered, adjudged and decreed as follows:

The Court has jurisdiction of the parties and of the subject matter of this action.

Venue was properly laid in this District.

The plaintiff, Illinois Tool Works, Inc. is the owner of United States Letters Patents Nos. 3,139,213, 3,091,360 and 3,061,139 and all rights thereunder.

Judgment on the complaint is entered for the plaintiff. Judgment on the counterclaim is entered for the plaintiff with prejudice.

United States Letters Patent No. 3,139,213, as to Claims 1, 2, 3, 5, 6, 7, 8 and 9 is in all respects valid and subsisting in law.

United States Letters Patent No. 3,091,360, as to Claims 1 and 3 is in all respects valid and subsisting in law.

United States Letters Patent No. 3,061,139, as to Claims 1, 2, 6, and 7 is in all respects valid and subsisting in law.

The defendant has infringed United States Letters Patent No. 3,139,213 as to Claims 1, 2, 3, 5, 6, 7, 8 and 9.

The defendant has infringed United States Letters Patent No. 3,091,360 as to Claims 1 and 3.

The defendant has infringed United States Letters Patent No. 3,061,139, as to Claims 1, 2, 6 and 7.

Defendant and each of its officers, agents, employees, servants, and all persons under its control or in privity with it is enjoined from directly or indirectly making, using or selling, causing to be made, used or sold or offering to make, use or sell containers embodying the invention of any of the Claims 1, 2, 3, 5, 6, 7, 8 and 9 of the United States Letters Patent No. 3,139,213 and from infringing upon, inducing infringement of, or contributing to the infringement of any of said claims, until the expiration of said patent.

Defendant and each of its officers, agents, employees, servants, and all persons under its control or in privity with it is enjoined from directly or indirectly making, using or selling, causing to be made, used or sold or offering to make, use or sell containers embodying the invention of any of the Claims 1 and 3 of the United States Letters Patent No. 3,091,360 and from infringing upon, inducing infringement of, or contributing to the infringement of any of said claims until the expiration of said patent.

Defendant and each of its officers, agents, employees, servants, and all persons under its control or in privity with it is enjoined from directly or indirectly making, using or selling, causing to be made, used or sold or offering to make, use or sell packages embodying the invention of any of the Claims 1, 2, 6 and 7 of the United States Letters Patent No. 3,061,139 and from infringing upon, inducing infringement of, or contributing to the infringement of any of said claims until the expiration of said patent.

An accounting shall be made and rendered as to the extent of the manufacture and sale of infringing containers by the defendant, and as to the amount of damages suffered by the plaintiff by reason of the defendant's infringement of any of the Claims 1, 2, 3, 5, 6, 7, 8 and 9 of the United States Letters Patent No. 3,139,213.

An accounting shall be made and rendered as to the extent of the manufacture and sale of infringing containers by the defendant, and as to the amount of damages suffered by the plaintiff by reason of the defendant's infringement of any of the Claims 1 and 3 of the United States Letters Patent No. 3,091,360.

An accounting shall be made and rendered as to the extent of the manufacture and sale of infringing packages by the defendant and as to the amount of damages suffered by the plaintiff by reason of the defendant's infringement of any of the Claims 1, 2, 6 and 7 and of the United States Letters Patent No. 3,061,139.

The said defendant and its officers, directors, attorneys, servants, agents, workmen and employees are hereby directed and required to attend before this Court or Master appointed by the Court, from time to time as required, and to produce such relevant devices, objects, books, documents and papers as requested and to submit to examination, oral or otherwise, in furtherance of the aforesaid accounting.

The cause is referred to the Executive Committee of this District for assignment to a Magistrate of this Court, for further proceedings and report.

ENTER:

/s/ FRANK J. MCGARR,
United States District Judge.

Dated: March 4, 1974.

UNITED STATES DISTRICT COURT

N. D. Illinois, E. D.

July 12, 1967.

ILLINOIS TOOL WORKS, INC.,

Plaintiff,

vs.

CONTINENTAL CAN COMPANY, INC.,

Defendant.

No. 65 C 2179.

MEMORANDUM OPINION.

DECKER, District Judge.

This is a suit for infringement of United States Patent No. 3,139,213 (" '213"), entitled "Nestable Cup," and for infringement of United States Patent No. 3,061,139 (" '139"), entitled "Self-Venting Package." The '213 patent was granted on June 30, 1964, upon an application originally filed on October 29, 1958, and divided on December 13, 1962, into the subject matter on which the '213 patent was granted and the subject matter on which United States Patent No. 3,091,360 was granted on May 28, 1963. The '139 patent was granted on October 30, 1962, upon an application filed on March 14, 1960. The applicant for both patents was Bryant Edwards, who has assigned all right, title and interest in both to plaintiff.

Plaintiff, Illinois Tool Works, Inc. ("ITW"), is a Delaware corporation, with its principal place of business and offices in Chicago, Illinois. Defendant, Continental Can Company, Inc. ("Continental Can"), is a New York corporation, with its principal place of business in New York and with a regular and established place of business in Chicago, Illinois.

In response to the complaint charging infringement, defendant filed an answer and counterclaim, asserting that the '213 and '139 patents are invalid and void and not infringed, and seeking a declaratory judgment under 28 U. S. C. §§ 2201, 2202 to this effect.

This court has jurisdiction of this case under 35 U. S. C. §§ 271 and 281 and under 28 U. S. C. §§ 1338(a) and 2201. Venue in this district is proper. The case was tried before the court on October 31 and November 1, 1966, and on November 7-18, 1966. This memorandum opinion, containing findings of fact and conclusions of law in accordance with Rule 52(a), Federal Rules of Civil Procedure, is based upon the evidence produced at the trial and upon the voluminous briefs filed by both parties. I have concluded that both the '213 patent and the '139 patent are valid and that Continental Can is guilty of infringement of both patents.

For convenience, this opinion will first set forth the general factual background concerning this suit and then will separately discuss the '213 and '139 patents and issues raised with respect to each of them.

In general, the subject matter of both patents involves thin-wall plastic cups and containers, used for containing beverages or food, and with the form of such cups and containers, together with thin plastic lids. These products are formed from sheets of plastic by the use of molds and a process known as thermoforming. ITW initially became interested in the container market in late 1956, and began to produce plastic drinking cups on a commercial basis in 1958. In 1959, ITW began to manufacture plastic cottage cheese containers and supplied plastic lids for these containers, through a subcontractor, commencing in 1960. Continental Can has been in the cup and container market for a number of years, and prior to 1956 manufactured and sold paper drinking cups and food containers. Continental Can manufactured and sold thin-wall plastic drinking cups for

use in vending machines on a sporadic basis from about 1956 through 1961. This product has been discontinued by Continental Can. In 1962 or 1963, Continental Can began to produce and sell plastic cottage cheese containers and lids and continues to do so at the present time. It is this latter product and activity by Continental Can which has directly given rise to this suit.

The '213 Patent.

1. Subject Matter.

In general, the subject matter of U. S. Patent No. 3,139,213 is a thin-wall plastic container, particularly of the expendable or throw-away variety. Such containers are typically used in vending machines, to hold hot and cold beverages, and in the field of dairy product containers, most particularly for cottage cheese products. The '213 patent, entitled "Nestable Cup," relates to the use of a Z-shaped stacking ring configuration around the side wall of the container. The purpose of this stacking ring is to permit the containers to nest one inside the other in tubular, telescopic fashion for economic storage and shipment and for use in vending machines and other machinery, where containers are dropped singly from the bottom of such a tube of containers to be filled with the appropriate beverage or product. The stacking ring is intended to permit such stacking to the extent of maximum telescoping without allowing the containers to wedge together, thereby providing for ready separation. The stacking ring is also intended to take advantage of the inherent resiliency of the plastic material and to embody a quality of resiliency in the column of containers, for the purpose of preventing the splitting of cartons of such containers during shipment if accidentally dropped, and otherwise to prevent problems arising from the rigidity of such columns of telescoped containers.

2. Background and Issues in Suit.

ITW first became interested in the packaging or container field in 1956, and became acquainted at that time with Mr. Charles Politis of Athens, Greece, who was promoting a thermo-forming machine and process. ITW negotiated an option with Politis in 1956 for his machine and process, and conducted several market surveys to determine the potential commercial value of thin-wall plastic containers. Following these surveys and several inspections of the Politis operation in Greece, ITW in the first part of 1957 signed a contract with Politis for a machine. Subsequent to this time, ITW assigned to one of its engineers, Bryant Edwards, the task of designing a suitable cup. Edwards designed a cup having a continuous Z-stacker configuration located at its rim and beneath the overhang of the rim curl, and in June 1957, Edwards took this design to Athens where sample cups were produced on the Politis machine. Edwards returned in July 1957, and a Politis machine was shipped to ITW at about the same time. Further sample cups were produced on this machine, but these were found to be unsatisfactory. Edwards then completely redesigned the cup, coming up with a cup utilizing a continuous Z-stacker configuration around the side wall below the rim of the cup.

About this same time, Edwards also designed a cup utilizing the continuous Z-stacker configuration at the bottom of the cup. ITW submitted copies of this latter cup to Automatic Canteen, a major consumer of vending machine products, and in December 1957 Automatic Canteen gave ITW a verbal order for 1,000,000 of these cups, with minor modification. Molds were constructed and production begun early in 1958. In April 1958, ITW produced and shipped to Automatic Canteen 50,000 of these cups. However, the Politis machine was not efficient, and individual sorting and inspection of each cup was required. It was decided at this time to redesign the cup to provide for much greater production tolerances. The change consisted of

adding an accentuated interrupted Z-stacker configuration to the existing Z-stacker ring at the bottom of the cup, and also further adding at spaced intervals camming nibs having lower surfaces oblique to the lower edge of the ring. The balance of the Automatic Canteen order was filled from about May 1958 through the fall of that year, and it was filled first with the accentuated interrupted Z-stacker cup and later with that cup having in addition the camming nibs. ITW has continued to produce and sell the latter cup, in part because of the cost of changing its molds and tools.

ITW subsequently embodied the Z-stacker ring in an all-plastic tub for cottage cheese products in the dairy food industry. New molds were designed, and the tub contained a continuous Z-stacker configuration located on the side wall below the rim. In the summer of 1959, these tubs were produced and market tested by the Borden Company, and commercial production commenced shortly after that time. This production has continued to the present time, on the part of ITW as well as by its domestic and foreign licensees.

On November 29, 1957, Bryant Edwards filed application Serial No. 699,678, for a thin-wall plastic "nestable cup" containing a continuous Z-stacker ring located around the side wall of the cup below the rim. Subsequently, on October 29, 1958, Edwards filed application Serial No. 769,057, also for a thin-wall plastic "nestable cup" with a continuous Z-stacker ring located on the side wall. Furthermore, this second application also described and claimed the interrupted accentuated Z-stacker ring and the camming nibs which were developed by Edwards in 1958 as a result of the commercial difficulties in producing cups to fill the Automatic Canteen order. Serial No. 769,057 was filed as a continuation-in-part of Serial No. 699,678 and Serial No. 699,678 was subsequently abandoned. After prolonged negotiation with respect to Serial No. 769,057, the Patent Office required a division under 35 U. S. C. § 121, and Serial No. 244,320 was filed on December 13, 1962. This application

described and claimed a continuous Z-stacker ring, together with the additional feature of an oblique lower edge to this ring, located on the side wall of the cup. The application was successfully prosecuted, and the '213 patent was issued on June 30, 1964. The feature of the camming nibs, some of which possessed oblique lower edges, in conjunction with a Z-shaped stacking ring was embodied in U. S. Patent No. 3,091,360, issued to Bryant Edwards on May 28, 1963, and also entitled "Nestable Cup."

ITW alleges infringement of four of the eleven claims in the '213 patent. These are Claims 1, 5, 6 and 9. Claim 1 reads as follows:

"A one-piece nestable seamless container of thin-wall plastic material of substantially uniform thickness, comprising a bottom and a side-wall of predetermined thickness integral therewith, the configuration of said bottom in central axial cross-section being such as to enhance its resistance to deformation, said sidewall being joined to said bottom at a circumferential bottom margin and tapering generally upwardly and outwardly therefrom in diverging relation to an upper margin defining an open upper end, said sidewall being of substantial height to permit gripping thereof by a user, said upper margin having a rim of predetermined axial extent which is of sufficient increased lateral width relative to the thickness of the thin plastic sidewalls to lend required lateral strength at said open upper end, said sidewalls having circumferential stacking ring means formed therein, positioned below and spaced axially from said upper rim and having an axial extent greater than the axial extent of the rim portion and substantially less than the height of said sidewall, said stacking ring means including a circumferentially disposed intermediate support section having at its lower extremity circumferentially disposed externally projecting shoulder means and having at its upper extremity circumferentially disposed internal shoulder means projecting inwardly from the container sidewall and of smaller minimum diameter than the maximum diameter of said external shoulder means and spaced upwardly from said bottom, said smaller

diameter being less than said greater diameter by more than twice said sidewall thickness, said internal shoulder means adapted to form a shelf to co-act with the complementary external shoulder means of a like container to positively limit the extent of telescopic association of said containers and the maximum diameter of the container in the vicinity of said external shoulder means being sufficiently less than the diameter of the internal container wall surface adjacent and above said internal shoulder means to counteract jamming of like containers when stacked, both said internal shoulder means and said external shoulder means being substantially circumferentially continuous, said intermediate section of the stacking means inclined inwardly and upwardly toward the cup axis to present the aforesaid inner shoulder means and to provide a thin-wall, resilient support therefore when axial pressure is applied there-against by the external shoulder means of a like, telescopically associated container."

Claim 5 reads:

"A container as set forth in claim 1 wherein at least one of said shoulder means has a surface associated therewith that is oblique relative to the container axis, the other shoulder means of an adjacent container being engageable therewith."

Claim 6 is identical with Claim 1, except that it provides that at least one of the shoulder means includes:

"* * * a circumferential surface oblique to the container axis, adapted for camming engagement with the other shoulder means of a like container telescopically associated therewith to enhance axial resiliency to a stack of containers in telescoped relation in response to axial pressures normally experienced by a stack of such containers."

Claim 9 reads:

"A container as set forth in claim 6 wherein the oblique surface in axial section presents a substantially straight line."

The alleged infringing product manufactured by Continental Can is a cottage cheese container, of thin-wall plastic material

and with a single continuous Z-shaped stacking ring located on the side wall below the rim. Thus, the other claims of the '213 patent, which cover a Z-stacker ring located at the bottom of a cup and the use of a series of circumferential rings, together with a Z-stacker ring, on the side of the cup for gripping and possible heat-transfer purposes, are not involved in this suit.

Essentially, the defenses interposed by Continental Can are two-fold: (1) an assertion that the '213 patent is invalid and therefore cannot be infringed, and (2) an assertion that in any event, Continental Can's product does not infringe the patent. In support of the invalidity defense, Continental Can asserts a number of specific grounds.

The first ground is that of anticipation under 35 U. S. C. §§ 102(a) and 102(b). With respect to the § 102(a) defense, Continental Can asserts, in particular, that experiments and developments of its own engineers involving thin-wall plastic containers prior to August 1957, the alleged conception date for the Edwards invention, constituted complete anticipations of this invention. Continental Can further asserts that various art patents and publications also constituted complete anticipations of the Edwards invention. Under § 102(b), Continental Can initially seeks to establish that, based upon the file wrapper history of the '213 patent, ITW is not entitled to the November 29, 1957, date or to the October 29, 1958, date as the date of application. According to this argument, the date of application is December 13, 1962. On this basis, Continental Can asserts that ITW's own commercial production and sale of cups to Automatic Canteen in 1957 and 1958 and sale of cottage cheese containers to Borden Company commencing in 1959 constituted public use and placing on sale of the invention in this country more than one year prior to the date of the patent application, under § 102(b). Furthermore, Continental Can asserts that its own developments from 1956 to 1960 and other prior art patents and publications were public uses and sales more than one year prior to Edwards' application under § 102(b).

A second ground is that the '213 invention was obvious to a person having ordinary skill in the art at the time of the invention, under the provisions of 35 U. S. C. § 103. The prior art relied upon by Continental Can for this ground consists of its own developments and advertising from 1956 to 1960, together with a number of prior art patents. This same prior art is also relied upon with respect to the anticipation defense, under §§ 102(a) and 102(b), as previously noted.

A third ground consists of the assertion that the claims of the '213 patent fail to point out and to claim the subject matter of the invention, with the particularity and distinctness required by 35 U.S.C. § 112.

A fourth ground, based generally upon the developmental history of Edwards' various cup and container designs, together with the file wrapper of the '213 patent, lies in the assertion that the alleged novelty of the invention is so limited as to deprive it of "invention," and therefore that it was not patentable.

These various grounds raised by Continental Can with respect to the general defense of invalidity are further asserted affirmatively by Continental Can in support of its counterclaim for a declaratory judgment that the '213 patent is invalid.

Continental Can's non-infringement defense proceeds upon the theory that even if the '213 patent is valid, its product does not infringe. In particular, it is asserted by Continental Can that its product does not infringe Claims 5, 6 and 9 of the '213 patent in that the product does not have an oblique shoulder, as delineated in these claims. Furthermore, it is argued that the product does not have resiliency in the sense in which that word is employed in Claim 1 of the '213 patent, but rather that any resiliency in the product is simply inherent in the plastic material of which it is composed. Continental Can also raises the defense of file wrapper estoppel in connection with its argument of non-infringement. This defense is based upon Edwards' cancellation of certain claims following their rejection by the Patent Office, which claims were contained in the December 13, 1962, divisional ap-

plication and Edwards' substitution of the present claims referring to "resiliency."

Before discussing in detail each of these defenses and the various grounds urged in support of them, it is necessary to define exactly the nature of the invention described and claimed in the '213 patent. This invention consists of a single circumferentially continuous Z-shaped stacking ring configuration, with an upper and a lower shoulder and a middle section inclined inwardly and upwardly relative to the cup axis, which stacking ring is located below the rim, on the side wall of the thin-wall plastic cup.

It is clear from the drawings, from the specification describing the drawings, and particularly from Claim 1 that this stacking ring is singular, is continuous around the cup, and is located as described above. Whether these features are significant with respect to patentability over prior art having double or interrupted rings, or locating the ring at a different place on the container, are issues which I will discuss at the appropriate place in this opinion, in connection with the respective prior art.

3. *The '213 Filing Date.*

Continental Can asserts that the '213 patent is wholly invalid because it was fully anticipated by prior art patents and publications, by ITW's own sales in 1958 and 1959 of cups and containers and by Continental Can's developmental activities and programs during the period of 1956 to 1960. Initially, the issue of the effective date of application for the '213 patent must be resolved. This date is especially relevant with respect to which products and activities occurring between 1956 and 1960 should be considered, both as to the one-year time bar of § 102(b) and as to the date of invention for purposes of § 102(a). The date is in fact a crucial one for ITW, since it is clear that if the earliest date ITW is entitled to is the date of the divisional application—December 13, 1962—as contended by Continental Can, ITW's own solicitation of the order from Automatic Canteen in December 1957 would constitute a placing on sale, and the actual

commercial production and shipment of the cups to Automatic Canteen in 1958, as well as the production and sale of cottage cheese tubs commencing in 1959, would constitute a public use of the invention "in this country, more than one year prior to the date of the application for patent in the United States," and thus invalidate the patent under § 102(b).

ITW contends that the '213 patent is entitled to the November 29, 1957, filing date for Claim 1, and to the October 29, 1958, filing date for Claim 6 (and presumably for Claims 5 and 9 as well). This contention is based upon the provisions of 35 U.S.C. §§ 120, 121¹ to the effect that a patent is entitled to the benefit of an earlier filed patent application if three basic requirements

1. § 120

"An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application."

§ 121

"If two or more independent and distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of the inventions. If the other invention is made the subject of a divisional application which complies with the requirements of section 120 of this title it shall be entitled to the benefit of the filing date of the original application. A patent issuing on an application with respect to which a requirement for restriction under this section has been made, or on an application filed as a result of such a requirement, shall not be used as a reference either in the Patent Office or in the courts against a divisional application or against the original application or any patent issued on either of them, if the divisional application is filed before the issuance of the patent on the other application. If a divisional application is directed solely to subject matter described and claimed in the original application as filed, the Commissioner may dispense with signing and execution by the inventor. The validity of a patent shall not be questioned for failure of the Commissioner to require the application to be restricted to one invention."

are met: (1) co-pendency of applications, (2) cross-reference to the earlier application, and (3) continuity of disclosure. Both the co-pendency and cross-reference requirements were satisfied; however, Continental Can contends that there was no continuity of disclosure, insofar as the original application filed on November 29, 1957, made no reference to "resiliency" or to any similar characteristic. Furthermore, Continental Can argues that while the October 29, 1958, application referred to resiliency, it did so with respect to the camming nibs and not with respect to the Z-stacker ring. It is argued that not until the divisional application was filed on December 13, 1962, was resiliency related to the Z-stacker ring. Thus, Continental Can contends that there was no disclosure of resiliency to the extent required by 35 U. S. C. § 112, either in the November 29, 1957, application or in the October 29, 1958, application.

Continental Can relies upon the testimony of its expert witness Vandenburg, who concluded from an examination of the various file wrappers that new matter was contained in the divisional application of December 13, 1962, in that resiliency was for the first time related to the Z-stacker ring. On this basis, Vandenburg stated that this was not a proper division and that ITW was only entitled to this date as of filing the application for the '213 patent. Continental Can also relies upon the case of *Graham v. John Deere Co.*, 383 U. S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966), in which the Supreme Court characterized as an "after-thought" the patentee's argument for the first time on appeal that one of the major advances of his invention with respect to a plough was its "free-flexing" quality throughout the shaft of the plough. However, the Court also found that this feature was not in fact significant in the patent and that the switching of the shank and hinge plate which permitted the "free-flexing" was obvious to anyone having ordinary skill in the prior art at the time of invention. Thus, the rejection of the argument of free-flexing in *John Deere* did not depend upon the "after-thought" characterization. Moreover, that case did not involve a continua-

tion-in-part and division. I do not find the "after-thought" argument to be applicable to the present case, where the resiliency feature was presented to and argued before the Patent Office and where this feature was inherent in the design and drawings of the cup, which were identical in each application. See also *Lincoln Engineering Co. of Illinois v. Stewart-Warner Corp.*, 303 U. S. 545, 549-550, 58 S. Ct. 662, 82 L. Ed. 1008 (1938).

The case of *Indiana General Corp. v. Lockheed Aircraft Corp.*, 249 F. Supp. 809 (S. D. Calif. 1966), which Continental Can also cites, can be distinguished. That case involved the filing of a continuation-in-part application following the original application, and the court did not allow the patentee the benefit of the earlier date on the grounds that the original application failed to disclose fully the "square" characteristic of the loop of the product. On this basis, the court held that the patentee's sales of the product at about the date of the original application constituted a commercial use more than one year prior to second application and therefore invalidated the patent under § 102(b). The court stressed that the "square" characteristic of the loop of the product was the essence of the invention and held that even though the particular product having a square loop property was generally disclosed in the original application, this disclosure did not satisfy § 112 in that it did not disclose how the square loop characteristic was produced or how it was to be used or applied.

Under the circumstances of this case, I am convinced that the disclosure as to resiliency in the first two applications was sufficient to entitle ITW to the benefit of those dates, with respect to the various claims of the '213 patent. Specifically, Figs. 1-4 of the '213 patent which relate to Claim 1 and which depict a single continuous Z-shaped stacking ring located on the side wall below the rim of the cup are identical to Figs. 1-4 in the November 29, 1957, application and to Figs. 1-4 in the October 29, 1958, application. The same material, thickness, shape and location are involved in all three applications. More importantly, the drawings and descriptions in each application portray the same inter-

relationships and interaction between the cups with respect to the Z-stacker rings when the cups are telescoped together in a column. As Continental Can's expert Vandenburg admitted, the property of resiliency claimed in the '213 patent was inherent and fully present in the earlier applications.

The inherency argument finds support in the familiar patent law principle that a patentee is entitled to all of the benefits and advantages of his patent, including uses and functions of which he was not aware at the time the patent was granted. See, e. g., *Radio Corp. of America v. Radio Engineering Laboratories*, 293 U. S. 1, 12-14, 54 S. Ct. 752, 78 L. Ed. 1453, reh. denied 293 U. S. 522, 55 S. Ct. 66, 79 L. Ed. 634 (1934); *King-Seeley Thermos Co. v. Tastee Freez Industries, Inc.*, 357 F. 2d 875, 880 (7th Cir.), cert. denied 385 U. S. 817, 87 S. Ct. 38, 17 L. Ed. 2d 56 (1966); *Talon, Inc. v. Union Slide Fastener, Inc.*, 266 F. 2d 731, 734 (9th Cir. 1959). While the court in the *Indiana General* case declined to apply this principle, it did so on the basis that the new use must result from the product or not involve a new principle or not be an unobvious use. In the present case, the resiliency feature or property does directly result from the structure, which is clearly described and depicted in both the November 29, 1957, application and in the October 29, 1958, application. No new principle or wholly unobvious use, as was involved in the *Indiana General* case, exists in this case. Furthermore, although these two applications both contained references to rigidity, it is clear that this rigidity was lateral rigidity, created by the use of numerous concentric rings or ridges about the cup, so as to prevent the cup from collapsing when grasped in a hand, and was not axial rigidity, so as to make a later claim of axial resiliency a possible contradiction and new principle, as Continental Can contends.

For these reasons, I hold that the requisite disclosure of resiliency existed in the November 29, 1957, application, and therefore that ITW is entitled to the benefit of that date as to the effective filing date for Claim 1 of its '213 patent, under

§ 120 and § 121. ITW is also entitled to the October 29, 1958, filing date for Claims 5, 6 and 9 of the '213 patent, insofar as the application filed on that date first fully described and disclosed the use of oblique shoulders with respect to the Z-stacker ring. However, even if ITW is not entitled to the November 29, 1957, date, it is entitled to the October 29, 1958, date for Claim 1, since the application of the latter date clearly stated:

"In all of the embodiments of the invention heretofore shown and described, the outlines of the cup are generally the same. In each instance, sections are provided for utilizing the inherent resiliency of the plastic, either directly, or by a wedging action or by both, whereby to impart a resilient characteristic to a stack of such cups telescoped together."³

When this statement is considered together with the drawings and descriptions which fully depicted the Z-stacker ring, it is clear that full disclosure for purposes of § 112 was present. Since none of ITW's acts in placing cups on sale or in actually producing and selling cups occurred prior to December 1957, the one-year time bar of § 102(b) does not invalidate the '213 patent, whether the November 29, 1957, date or the October 29, 1958, date is given effect.

4. Anticipation.

As the Supreme Court stated in the recent case of *Graham v. John Deere Co.*, supra, 383 U. S. at 12, 86 S. Ct. at 691, the patentability of a particular device depends "upon three explicit conditions: novelty and utility as articulated and defined in § 101 and § 102, and non-obviousness * * * as set out in § 103." Continental Can does not raise lack of ability as a

2. Continental Can's witness Vandenburg contended that this language in the October 29, 1958, application was a "mistake" on the part of the applicant and was inconsistent with other language referring to rigidity. I do not agree and find no inconsistency between references to lateral rigidity and to axial resiliency, as previously stated.

defense to the '213 patent in this suit, but does contend that the patent lacked both novelty and nonobviousness, and therefore is invalid. These tests are separate and involve different standards and considerations. In general, statutory novelty, as contained in § 102, requires a determination that the particular invention has not been made before, and therefore that it is in fact new. See generally *Graham v. John Deere Co.*, supra, at 14, 86 S. Ct. 684 (quoting from H. R. Rep. No. 1923, 82d Cong., 2d Sess. at 7 (1952); S. Rep. No. 1979, 82d Cong., 2d Sess. at 6 (1952), U. S. Code Congressional and Administrative News, p. 2394).

The statutory requirement of novelty is set forth in § 102(a), which provides:

"A person shall be entitled to a patent unless—(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent."

Where the invention was previously known or used by others in this country, it is said to have been anticipated. Similarly, courts have employed the term anticipation in connection with § 102(b), which provides:

"A person shall be entitled to a patent unless—(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States."

Since § 102(b) embodies a one-year time bar and is most frequently raised where the patentee or applicant himself has used or sold his invention more than one year prior to his application for patent, it is probably more appropriate to consider this section as defining a situation under which an applicant loses his right to a patent and not as defining novelty. See, e.g., *Application of Foster*, 343 F. 2d 980, 987-988 (C. C. P. A. 1965). However, both §§ 102(a) and 102(b) involve prior knowledge,

use or sale of *the invention* which is the subject matter of the patent, and therefore employ a similar standard as to the nature of the prior knowledge, use or sale with respect to its identity or similarity to the patented invention.³ See generally 1 Deller's *Walker on Patents* §§ 77-82 (2d ed. 1964).

Under both §§ 102(a) and 102(b), the test of anticipation is framed in terms of the identity of the prior device with the later patented invention or invention on which a patent is sought. The test is frequently stated as "disclosure in the prior art of a thing substantially identical with the claimed invention." 1 Deller's *Walker on Patents* § 57 at 237 (2d ed. 1964). "Substantially identical" in turn has been defined as occurring where the two inventions "perform substantially the same function or office in substantially the same way, and produce substantially the same result." *Delta Mfg. Co. v. E. L. Essley Mach. Co.*, 153 F. 2d 905, 906-907 (7th Cir. 1946) (quoting from 48 *Corpus Juris* § 27 (1929)), cert. denied 328 U. S. 867, 66 S. Ct. 1376, 90 L. Ed. 1637 (1946). Furthermore, it has been generally stated that there is substantial identity of inventions where the subsequent invention does not involve inventive skill over the first but would have been obvious to a person having ordinary skill in the art. See, e.g., *Duo-Flex Corp. v. Building Service Co.*, 322 F. 2d 94, 96 (5 Cir. 1963); *Ranco, Inc. v. Gwynn*, 128 F. 2d 437, 443 (6th Cir. 1942). These definitions would appear to be overly broad and to confuse anticipation with the separate test of invention, presently embodied in the statutory language of "non-obviousness" in § 103. It should be recognized that anticipation is a narrow technical defense, which does not

3. Of course, §§ 102(a) and 102(b) do not involve the same tests and reference points generally as to invalidity. Section 102(a) directs the inquiry to a prior use or knowledge of others in this country at any time before the patent applicant's *date of invention*. Section 102(b) directs inquiry to a public use or a placing on sale in this country more than one year prior to the *date of application*. Thus, while a particular reference may invalidate a patent or patent application under both §§ 102(a) and 102(b), this is not necessarily the case. The point is that the relevant test of disclosure is the same under both sections.

raise for consideration all that the prior art discloses, but occurs only where the same or virtually identical device or invention has previously been disclosed. See, e.g., *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Sup. Co.*, 332 F. 2d 406, 414-415 (6th Cir. 1964). As stated by the Court of Appeals for the Tenth Circuit:

"Anticipation is strictly a technical defense and unless all of the same elements are found in exactly the same situation and united in the same way to perform an identical function, there is no anticipation." *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F. 2d 381, 398 (10th Cir. 1965), cert. denied 383 U. S. 933, 86 S. Ct. 1061, 15 L. Ed. 2d 851 (1966).

See also *Stauffer v. Slenderella Systems of California*, 254 F. 2d 127, 128 (9th Cir. 1957).

In this case, where the same prior art knowledge, uses, patents and publications are cited both as anticipations under § 102 and as evidence of the obviousness of the '213 invention under § 103, it is important to distinguish between these separate defenses and to adhere to a narrow standard of virtual identity in every aspect of the inventions to find that an anticipation has occurred. Furthermore, such identity must exist in a single prior structure, patent or description, and it is not proper in this case to combine the various prior art references cited by Continental Can with respect to what each discloses. See, e.g., *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Sup. Co.*, supra, 332 F. 2d at 414; *Borkland v. Pedersen*, 244 F. 2d 501, 502 (7th Cir. 1957); but see *Application of Foster*, supra, 343 F. 2d at 988-989. Since the '213 invention is embodied in a patent, the presumption of validity under 35 U. S. C. § 282 attaches, and the burden of proof rests upon Continental Can to show prior knowledge or use under § 102(a) or prior public use or sale under § 102(b) of the invention by "clear and cogent evidence." See, e.g., *Corona Cord Tire Co. v. Dovan Chemical Corp.*, 276 U. S. 358, 382-383, 48 S. Ct. 380, 72 L. Ed. 610 (1928);

Devex Corp. v. General Motors Corp., 321 F. 2d 234, 238 (7th Cir. 1963). Similarly, the burden is upon Continental Can in asserting anticipation on the basis of prior art patents and publications to sustain this claim by clear and convincing evidence. A patent or publication "is to be measured as anticipatory, not by what might be made out of it, but by what it clearly and definitely discloses." *McCullough Tool Co. v. Well Surveys, Inc.*, supra, 343 F. 2d at 398. Furthermore, "a prior patent or other publication to be an anticipation must bear within its four corners adequate directions for the practice of the patent invalidated." *Dewey & Almy Chemical Co. v. Mimex Co.*, 124 F. 2d 986, 989 (2d Cir. 1942).

In particular, Continental Can asserts that various developments, experiments and uses of plastic containers by its own engineers and employees in 1956 and 1957, prior to the alleged Edwards' conception date in August 1957, and "involving extensive development and use of stacking rings with Z configuration," completely invalidate the claims of the '213 patent. These activities, according to Continental Can, amounted to knowledge or use of the '213 invention by its engineers and employees in this country before Edwards' date of invention, within the meaning of § 102(a). ITW counters this argument with the assertion that these developments were incomplete or abandoned experiments, and thus were not anticipations under § 102(a). ITW further asserts that in any event none of these developments embodied the exact Edwards' invention and therefore were not anticipations or prior art.

Section 102(a) deals with knowledge or use of the invention by others prior to the date of invention by the applicant for patent. "Invention" is normally defined as consisting of conception plus reduction to practice of the particular device. See, e.g., *Wright Aeronautical Corp. v. General Motors Corp.*, 166 F. 2d 636, 640 (7th Cir. 1948); *Stub v. United States*, 63 F. Supp. 748, 749-750, 105 Ct. Cl. 397 (1946) cert. denied 329 U. S. 751, 67 S. Ct. 81, 91 L. Ed. 647 (1946). In this case, the evi-

dence clearly reveals that Edwards completely revamped his cup design in August 1957, and produced the cup design which was subsequently embodied in the first '213 application, filed on November 29, 1957, and which is presently depicted as Figs. 1-4 in the patent. The evidence further reveals that sample cups of this design were actually produced on the Politis machine of ITW in September 1957. Thus, the date of invention for the '213 patent was no later than September 1957, which is consistent with the previous discussion of the effective date of filing to which ITW is entitled.⁴ It is only Continental Can's developmental activity prior to September 1957 which is relevant for purposes of prior knowledge or use under § 102(a).

Continental Can's developmental activity in the area of plastic cups prior to September 1957 consisted of its 7¼ V cup program, extending from 1956 to 1957, and its 7AB cup program, extending from 1956 into 1958. These programs were primarily carried on through the efforts of Mr. William Miller, an engineer employed by Continental Can throughout this period and presently so employed. The purpose of the programs, as admitted by Miller, was to develop a plastic "cup, machinery, process, everything concerned with it, as soon as we could at the least amount of money," and to place this cup into commercial use. Transcript p. 1305. Numerous designs, samples and some production cups were produced in the course of these programs, and Continental Can engaged in advertising various cups and cup designs from 1957 to 1959. Continental Can also conducted developmental activity in 1956 and 1957 with respect to plastic food containers, including a ½ gallon ice cream container.

4. This date is November 29, 1957, with respect to Claim 1 of the '213 patent. The filing date for Claims 5, 6 and 9 is October 29, 1958. However, since the basic subject matter of the '213 patent is fully covered and disclosed by Claim 1, for purposes of anticipation, I have chosen to treat the September 1957 and November 29, 1957, dates as the relevant ones, without considering separately the date of invention or the filing with respect to the oblique shoulder feature covered by Claims 5, 6 and 9.

These various cups, cup designs and food containers employed a number of different stacking configurations. The first thin-wall plastic thermo-formed cups designed and produced by Continental Can in the first part of 1956 as a part of the 7¼ V cup program under Miller's direction were smooth-walled cups, modeled generally on the design of existing paper cups, with a rim-stacking configuration which was circumferentially continuous and in the shape of a "lazy S." In effect, this configuration was simply a groove in the inside of the side wall of the cup, located just below the rim. A cup in this general form and design was subsequently produced in commercial quantities and apparently sold for use in hot-drink vending machines in late 1956 and early 1957. However, such cups do not contain a circumferentially continuous single Z-shaped stacking ring located beneath the rim on the side wall of the cup, which is the subject matter of the '213 invention. Edwards, in his development of the '213 invention, began with a rim-stacking configuration, but abandoned this altogether for the sidewall configuration developed in August and September 1957. Miller's testimony at the trial revealed that the 7¼ V cups with rim-stackers were not successful and frequently jammed and telescoped.

Other cup designs in the 7¼ V cup program employed single side-wall continuous *vertical*, as opposed to Z-shaped, stacking configurations and stacking facilities inset into the bottom and spaced from the side wall of the cup. The evidence presented at the trial revealed that considerable jamming difficulties existed in the 7¼ V cups, due to side-wall nesting and the tendency of the cups to override the shoulders of the various stacking configurations. In other words, the stacking configurations were deficient and unacceptable for commercial use, a fact borne out by the subsequent variety of stacking designs which Miller investigated and tested in the various 7AB cups and cup designs.

In the 7AB cup developmental activity, Miller turned to the use of a double Z-stacker ring configuration. In the first model in this project, the "A" cup, the double ring was located at the

rim, with the upper ring being continuous and the lower ring, immediately adjacent to the upper, being divided into three protruding segments. Some of these cups were produced and tested by Miller and other employees of Continental Can in early 1957, but no commercial production occurred. A second model was the "B" cup, designed and produced in limited quantities in late 1956 and early 1957. The cup contained a stacking ring at the rim, below which was located a configuration composed of twelve semi-circular protrusions, generally inclined inwardly and upwardly relative to the axis of the cup. A third cup model was the "C" cup, designed and produced in limited quantities for internal testing in February 1957. These cups contained a stacking ring at the rim with a partial second ring consisting of four spaced segments located immediately below the upper ring. Both rings contained oblique lower shoulders. In June or July 1957, sample cups for testing were produced in limited quantity by Continental Can. These cups contained indented, semicircular intrusions about the base of the cup, in the side wall, which indentations were inclined upwardly and inwardly and were also slightly wider at the top than at the bottom. The cups also contained a single segmented (in four parts) protruding ring in the side wall of the cup below the rim, similar to the lower ring in the "C" cup model. In late spring of 1957, Miller designed and produced in limited quantity certain cups composed of paper with plastic bottoms. The bottoms contained indentations in the side walls for stacking purposes, similar to those in the all-plastic cups described above. These combination paper and plastic cups were never commercially produced and the project was abandoned in late 1957 as being too expensive.

During this period, two of the various cup designs developed in the course of the 7AB cup project were embodied in commercial projects. These cups were produced and presumably sold in the late spring or early summer of 1957. The first such cup, designated as the "D" production cup, involved a rim-stacking configuration consisting of an upper ring and lower

partial ring, both of which had oblique lower shoulders, and virtually identical to the configuration on the "C" model cup. In May 1957 Continental Can advertised this cup in a national trade magazine. The second cup, the "7AB Special" cup, was a smooth-walled cup having a stacking configuration at the bottom of the side wall, which configuration consisted of twelve semi-circular indented and inclined intrusions, as described previously. Apparently, Continental Can continued to experience difficulties with respect to jamming, telescoping, and axial rigidity of a column of cups in these and in the other various 7AB cup designs and models.

Continental Can also introduced evidence relating to developmental activity during the first seven or eight months of 1957 with respect to food containers composed of thin-wall thermoformed plastic. These containers included a double Z-shaped stacking ring configuration similar to that just described in connection with the "D" production cup, except that the upper ring on the food container was not immediately adjacent to the rim and was not under the overhang of the rim curl. Rather, the upper ring was located on the side wall of the container below the rim. The second, segmented ring was located immediately below the upper ring. There was no evidence that any of these containers were actually produced in quantity or sold commercially at this time.

In 1957 Continental Can also designed and tested some models of a rectangular $\frac{1}{2}$ gallon ice cream container composed of polyethylene and of polystyrene plastic. Some of these models employed a double rim stacking configuration with vertical mid-sections. Others contained double rim-stacking configurations which were generally Z-shaped, but vertical at the four corners of the container. This project never progressed beyond an initial design and testing phase.

With the possible exception of some of the food containers which had a single continuous Z-shape stacking ring located below the rim in the side wall, together with a lower segmented

ring, none of the above-described designs or models was sufficiently identical to the '213 invention to have constituted an anticipation of that invention. Each of these designs contained significant and material differences from the '213 invention. In particular, the rim-stacking configuration which many of these designs employed was the same sort of configuration which Edwards designed in May 1957 and which he expressly abandoned in August 1957. The bottom stacking configurations, and various other segmented configurations, involving either intrusions or protrusions, were quite different from the '213 single continuous Z-shaped ring configuration. Miller himself admitted at the trial that none of his various plastic cup or food container designs, developed from 1956 through 1960, involved "a single side-wall continuous Z-shaped stacking ring." Transcript pp. 462, 464. Moreover, Miller on June 29, 1961, in connection with the proposed production of a 16 ounce cottage cheese container, stated in a letter: "Stacking will be controlled by the bottom section. I have reverted to the stacking design we used on the 7 ounce cups we made several years ago, correcting the one mistake we made. The bottom of the stacking band is now a solid ring."

Continental Can argues that once the basic geometry of a Z-stacking ring configuration is conceived and adopted, the use of a segmented, double ring, or other variation is merely a matter of choice and preference—only a difference of degree. Continental Can also argues that the exact geometry of the Z-stacking ring is dictated by the requirements of the plastic material and by the need to provide that the cup can be readily stripped from the mold. However, Miller's extensive design activity and his constant change of designs, without once actually producing the '213 invention, serves to counter these arguments. Miller was searching for a better design, and he finally employed a single side-wall continuous Z-shaped stacking ring in the cottage cheese containers, developed in 1962 and 1963. It was not merely a matter of preference or choice for him. Moreover, even if Con-

tinental Can's arguments are valid, the "difference of degree" involved between the various Miller designs and the '213 invention were sufficient to negative the status of any of the former as anticipations, within the narrow and technical definition of that term.

With the exception of the few cups which were actually produced and sold commercially, there is also a second basis for rejection of each of the various Miller cup designs and models as an anticipation of the '213 invention. These were merely experimental designs and models, used for internal tests and inspection by Continental Can. They did not constitute prior knowledge or use of the invention which was accessible to the public. See, e. g., *Gayler v. Wilder*, 51 U. S. (10 How.) 477, 13 L. Ed. 504 (1850). Although a single prior use may be sufficient to constitute an anticipation, *Coffin v. Ogden*, 85 U. S. (18 Wall.) 120, 124, 21 L. Ed. 821 (1873), and although this use need not be a commercial one, *Corona Cord Tire Co. v. Dovan Chemical Corp.*, supra, 276 U. S. at 382-385, 48 S. Ct. 380, it must be an actual and complete use of the particular invention. In the technical sense of the phrase, there probably was the requisite "reduction to practice" of the various Miller cup designs for which molds were actually made and samples produced. However, these models were used solely for tests and experiments inside the laboratories of Continental Can, in the course of the development of commercial products. In no sense were the models considered as final products, but merely as steps along the path of designing a final product. Under these circumstances, it is clear that, with the exception of the few commercially produced cups, all of these various designs and models were merely experiments subsequently and quickly abandoned for other designs and models. See, e. g., *Connecticut Valley Enterprises, Inc. v. United States*, 348 F. 2d 949, 951-952 (Ct. Cl. 1965). As such, they are without any status as either prior art, with respect to § 103, or anticipations, with respect to §§ 102(a) and 102(b). See e. g., *Gayler v. Wilder*, supra.

At most, all of the evidence of Miller's extensive developments and various designs merely indicates that he was engaged at the time in a course of conduct aimed at designing and producing a practical commercial plastic vending cup and other plastic containers. He was experimenting with this end in mind, and it is clear that this was not achieved until 1962 or 1963, after ITW's extensive production and sale of cottage cheese containers embodying the '213 invention. See, e. g., *The Telephone Cases*, 126 U. S. 1, 547-567, 8 S. Ct. 778, 31 L. Ed. 863 (1888).

On the basis of the foregoing analysis and discussion, I conclude that none of Continental Can's development activity with respect to plastic cups and containers and occurring during 1956 or 1957 constituted an anticipation of the '213 invention. More specifically, none of these designs was knowledge or use prior to the date of invention of the '213 patent, within the meaning of § 102(a), and similarly none of them was a public use or sale more than one year prior to the filing date of the application for the '213 patent, within the meaning of § 102(b). In fact, none of these designs appeared or was in any sense reduced to practice more than one year prior to the November 29, 1957, filing date, which pertains to Claim 1 and to the basic invention of the '213 patent, as I have previously found. Furthermore, none of the other prior art patents or publications, which will be discussed in detail in connection with Continental Can's defense of obviousness under § 103, was sufficiently identical to the '213 invention to have constituted an anticipation of that invention, under either § 102(a) or § 102(b), as generally asserted by Continental Can. See e. g., *McCullough Tool Co. v. Well Surveys, Inc.*, supra, 343 F. 2d at 398; *Dewey & Almy Chemical Co. v. Mimex Co.*, supra, 124 F. 2d at 989.

Section 103 provides, in part:

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject mat-

ter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said, subject matter pertains."

This section, added to the patent law in 1952, codified the existing judicially-created requirement of invention for patentability. See *Graham v. John Deere Co.*, supra, 383 U. S. at 17, 86 S. Ct. 684. As stated by the Supreme Court in the *John Deere* case, this section involves a factual inquiry, under which "the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level or ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined." *Graham v. John Deere Co.* supra, at 17, 86 S. Ct. at 694. The relevant time with respect to which this analysis is to be conducted is the time of invention, and courts must be wary to avoid applying hindsight in light of subsequent knowledge or disclosures. See, e. g., *Zegers v. Zegers, Inc.*, 365 F. 2d 156, 159 (7th Cir. 1966). Furthermore the "apparent simplicity of an invention when viewed in retrospect" is not a test of invention or indicative of obviousness. *Amp Inc. v. Vaco Products Co.*, 280 F. 2d 518, 521 (7th Cir.), cert. denied 364 U. S. 921, 81 S. Ct. 286, 5 L. Ed. 2d 260 (1960).

An inventor is charged with knowledge of all that the prior art, taken as a whole, discloses with respect to the subject matter of the invention, and a person skilled in the art is further presumed to have had at his disposal all relevant prior art constructions and patents, as well as disclosures contained in patent applications pending before the Patent Office at the time of the filing of the patent in suit. See, e. g., *Hazeltine Research, Inc. v. Brenner*, 382 U. S. 252, 86 S. Ct. 335, 15 L. Ed. 2d 304 (1965); *Walker v. General Motors Corp.*, 362 F. 2d 56, 60 (9th Cir. 1966).

The patent is presumed to be valid. 35 U. S. C. § 282. A party asserting that a patent is invalid "has a heavy

burden of establishing invalidity by clear and convincing evidence." *Walt Disney Productions v. Fred A. Niles Communications Center, Inc.*, 369 F. 2d 230, 234 (7th Cir. 1966). This presumption is strengthened where the validity of the patent is challenged on the basis of prior art cited by the Patent Office. *Shumaker v. Gem Mfg. Co.*, 311 F. 2d 273, 275 (7th Cir. 1962). However, "there is no presumption of validity as against prior art not before the patent office." *Skirow v. Roberts Colonial House, Inc.*, 361 F. 2d 388, 390 (7th Cir. 1966). Where the Patent Office cites some prior art, but not other equally relevant and similar prior art, the presumption is weakened only to the extent that the teaching of the uncited art is not disclosed in the cited art. See *T. P. Laboratories v. Huge*, 371 F. 2d 231, 234-235 (7th Cir. 1966); *Jaybee Mfg. Corp. v. Ajax Hardware Mfg. Corp.*, 287 F. 2d 228, 229 (9th Cir. 1961).

In support of its general contention that the '213 patent is invalid because its subject matter was obvious to a person having ordinary skill in the art in 1957, Continental Can relies primarily upon eight patents, some of which were cited by the Patent Office in considering the '213 patent and some of which were co-pending with the '213 patent. Continental Can further contends that each of these "primary patents" contains a complete teaching of the '213 patent, and especially of Claims 1, 5, 6 and 9, which are involved in this suit, and thus offers these patents as anticipations under § 102, as well as evidence of obviousness under § 103.

The first patent relied upon by Continental Can is Geuder, U. S. Patent No. 795,437 (July 25, 1905). This patent discloses washtubs of heavy-gauge sheet metal, which contain a series of corrugated rings located on the side wall below the rim and circumferentially continuous about the side wall. These rings were designed to permit the nesting of the tubs, one inside another, without contact between the side walls of the tubs, for economic storage and shipment. In particular, the purpose of the rings (denominated "inturned and outturned beads" by the

patentee) was to prevent wedging of the tubs or damage to them in separation, when stacked one inside the other, which wedging or damage was specifically caused by the protruding seam on the side of the tub, resulting from the joiner of the sheet metal. An "incidental advantage" of this construction, according to the patentee, was the protection of the drop handles of the tubs, which are located on the outside of the tub, just below the rim.

Although the Geuder patent was cited by the Patent Examiner who considered the October 29, 1958, application, there is no evidence that Geuder was specifically cited against the subject matter which eventually matured into the '213 patent and Geuder is not cited in the file of the '213 patent. Rather, Geuder was cited with respect to the subject matter of U. S. Patent No. 3,091,360, which was granted following the division of the October 29, 1958, application and which involved the use of camming nibs and protrusions in connection with a Z-shaped stacking ring on thin-wall thermo-formed plastic containers. Geuder is officially cited in the file on the '360 patent, and the patentee, before the Patent Office, specifically distinguished it (Application Serial No. 769,057, at pp. 89-90) on the basis that it did not involve downwardly extending protuberances (or nibs) which were essential in guiding light-weight plastic cups and in facilitating the entrance of air between such cups when stacked to allow gravitational separation in vending machines. Thus, it does not seem that Geuder was cited with respect to the '213 patent, and the presumption of validity of the latter patent does not exist as against the disclosures of Geuder.

Nevertheless, Geuder contains significant differences from the subject matter of the '213 invention to the extent that it does not anticipate that invention and does not demonstrate that the subject matter of the '213 patent would have been obvious to a person having ordinary skill in the art in 1957. While Geuder does disclose the use of a stacking configuration wherein the lower shoulder of the inside tub rests upon the upper shoulder of the outside tub and side-wall nesting is prevented, this con-

figuration is not Z-shaped. The Z-shaped characteristic is essential to the '213 patent, as Edwards testified, providing resiliency as well as non-jamming nesting of cups. Geuder is not concerned with these matters and in fact involves a non-analogous art and use. The purposes of the Geuder invention, as indicated, were substantially different from those of the '213 invention. A different material and means of creation of the product were involved. Geuder was not concerned with lightweight plastic cups and containers which are stacked in vending machines and other mechanical equipment and which are subjected to severe stress relative to their composition. Although Geuder generally involves a container and a stacking configuration, and for those reasons can be said to be pertinent prior art in the sense that a person skilled in the art would reasonably have been expected to look to Geuder for a solution, see, e. g., *Graham v. John Deere Co.*, supra, 383 U. S. at 35, 86 S. Ct. 684, it does not supply this solution and does not render the solution obvious. Evidence to this effect is strongly shown in this case by Miller's various unsuccessful experiments and designs with plastic cups involving numerous stacking configurations, some of which were quite similar to Geuder. Miller was a person who was obviously and admittedly skilled in the art. Miller testified that he had, prior to 1957, seen tubs of the Geuder design, and had actually designed equipment for producing such tubs. Miller further testified that in his opinion the '213 invention was suggested by Geuder. Yet, Miller, with all of his experience and skill, did not produce the '213 invention during the course of his extensive experimentation until 1962 or 1963, after ITW's cottage cheese container had been produced and sold in quantity and had met with extensive commercial success. At about that time, in 1962, Miller referred to his earlier experiments involving stacking rings as containing a "mistake" and changed his design to one virtually identical to the '213 patent, as embodied in ITW's cottage cheese containers.

A second "primary" patent relied upon by Continental Can is Pfalzgraf, U. S. Patent No. 1,324,432 (December 9, 1919).

This patent also relates to heavy-gauge sheet metal washtubs, and discloses the use of a continuous Z-shaped ring about the circumference of the tub and located on the side wall below the rim. This ring contains an oblique upper and lower shoulder, and serves to prevent side-to-side rocking or tilting of the tubs when stacked one inside another. It does not function as a stacking device, since this feature is accomplished by the handles of the respective tubs. When the tubs are stacked in normal fashion, there is, in fact, no co-action between the respective rings, and the lower shoulder of the upper or inside tub does not rest upon the upper shoulder of the lower or outside tub.

The Pfalzgraf patent was not cited by the Patent Office in its consideration of the '213 patent. However, I do not find that Pfalzgraf's disclosures render the subject matter of the '213 patent obvious to one skilled in the art in 1957. The Z-configuration was clearly a secondary feature on the washtub and not used for stacking. In other respects, the Pfalzgraf patent is subject to the same deficiencies as the Geuder patent, in that it involves non-analogous subject matter where different purposes, uses and problems are involved than those in the '213 subject matter. Again, Miller testified that he had been familiar with washtubs of the Pfalzgraf variety prior to his employment by Continental Can. However, Miller's own extensive experimentation in 1956 and 1957 with various stacking configurations and cup designs and his failure to achieve the '213 invention, in light of his conceded expertise and skill and his actual knowledge of the prior art product, are again strong evidence of the non-obviousness of the '213 invention with respect to the disclosures of the particular prior art product and patent. Furthermore, neither the Geuder nor Pfalzgraf patents, for the reasons stated, were sufficiently identical to the '213 invention to have constituted an anticipation of that invention, either under § 102(a) or § 102(b).

A third primary patent cited by Continental Can is Amberg, U. S. Patent No. 2,707,588 (May 3, 1955). The Amberg patent

discloses a paper lid used for sealing a paper container, and the combination of lid and container. Both the lid and the top of the container utilized a continuous Z-shaped configuration about the wall. However, there is no evidence that this was intended in any respect as a stacking device. Rather, as the patent plainly indicates, these configurations existed to permit the lid to seal and to interact tightly with the container. When so joined, the lid and container did not rest one upon the other, as do the '213 cups when in a stack or column, but nested tightly together, by contact of their respective side walls. The purpose of the configurations was entirely different from that in the '213 patent. Moreover, the structures themselves in the Amberg patent are significantly different from that of the '213 patent. Both of the structures in Amberg are located at the rim, a location which Edwards specifically abandoned in the '213 invention. Furthermore, the lid has no side wall at all other than the inclined part. Although this patent was not cited by the Patent Office in the file of the '213 patent, I do not find that its disclosures would have rendered the '213 invention obvious to a person having ordinary skill in the art in 1957, and furthermore, the Amberg patent was not an anticipation of the '213 invention. With respect to the latter finding, the language of the Court of Appeals for the Seventh Circuit in *Young Radiator Co. v. Modine Mfg. Co.*, 55 F. 2d 545, 547 (7th Cir. 1931), is especially relevant:

"It is not sufficient to constitute anticipation that the device relied on for that purpose might, by modification, be made to accomplish the function performed by the patent in question if it were not so designated by its maker, nor adapted nor actually used for the performance of such function."

See also *Topliff v. Topliff*, 145 U. S. 156, 161, 12 S. Ct. 825, 36 L. Ed. 658 (1892); *Copease Mfg. Co. v. American Photocopy Equipment Co.*, 298 F. 2d 772, 779 (7th Cir. 1961).

A further patent relied upon by Continental Can is Nowak, U. S. Patent No. 2,749,572 (June 12, 1956), entitled "Method of Shaping Thermoplastic Sheets." As the title indicates, the

Nowak patent primarily relates to and claims a method for forming thermoplastic sheets. Incidental to this purpose, the drawings of the product itself, in various stages of the thermo-forming, reveal that the product contains an "annular groove" about the rim of the product, located under the rim overhang. No reference is made in the patent with respect to stacking or otherwise as to its purpose. Some sort of indentation is also revealed about the side wall of the product at its bottom, but no reference is made to this configuration or to its purpose. Although the Nowak patent was not cited by the Patent Office in the '213 file wrapper and although Miller testified that in his opinion the top indentation was a Z-configuration, I cannot conclude from this evidence that the '213 invention would have been obvious to a person having ordinary skill in the art. The nature and purposes of the various configurations shown on some of the drawings accompanying Nowak are wholly matters of speculation. The patent itself was altogether unconcerned with these matters. Even if an interpretation most favorable to Continental Can is adopted with respect to the top configuration in Nowak, this configuration is merely a Z-shaped rim stacking ring, of the sort Edwards expressly abandoned in August 1957. Moreover, the Nowak patent did not constitute an anticipation of the '213 invention.

Continental Can further cites Flack, U. S. Patent No. 2,879,917 (March 31, 1959) and Aldington, U. S. Patent No. 2,985,354 (May 23, 1961). Both of these patents were considered by the Patent Examiner in connection with the '213 patent and are cited in the file of that patent. The Flack patent, for "nestable plastic containers," reveals the use of a circumferentially continuous vertical stacking ring located at the rim about the side wall of the cup. This patent was distinguished from the '213 invention in argument before the Patent Office primarily on the basis that the stacking ring in it is vertical, thereby depriving the cups of resiliency when arranged in a stacked column. The spring-like quality, to which Edwards testified at the trial, resulting from the Z-shaped ring, is not present.

Continental Can asserts that Edwards' testimony at the trial, that even a vertical stacking arrangement has some resiliency owing to the nature of the plastic material, is inconsistent with the distinction made before the Patent Office and is indicative that the Patent Office was misled in this regard. I do not find any merit in this argument. The '213 patent, as allowed by the Patent Office, clearly stated in the specification:

"It is therefore an object of this invention to provide a plastic cup which is configured to take advantage of the *inherent resiliency* of the plastic material for providing a resilient stack of cups." (Emphasis added.)

Certainly, any relatively thin plastic material, such as is utilized in the Flack patent or in the '213 patent, has an inherent resiliency, and the Patent Office was not misled. The distinction made before the Patent Office, however, and the subsequent allowance of the '213 patent, do strongly indicate its opinion that the Z-configuration alone, when used in such cups, was a patentable feature, which was not anticipated by the vertical rim-stacker in Flack and was not obvious in light of that configuration.

The Aldington patent, also cited by the Patent Office, reveals a plastic or paper lid for containers, entitled "Self-Conforming Cover for Containers." This lid has a side wall with a general Z-shape, the primary purpose of which is to interact with a protruding circumferential groove located below the rim of the particular container, in order to provide a tight seal. Incidental to this, the specification of the Aldington patent also states that this Z-configuration will facilitate stacking of the lids prior to application to the container, and will prevent jamming or wedging. However, all of this was before the Patent Office and the '213 patent was issued over the Aldington reference.⁵ The pre-

5. Continental Can alleges that since counsel for Edwards distinguished Aldington on the basis that it was not concerned with jamming problems in stacked lids and since the specification in Aldington does specifically refer to this feature, the Patent Office was misled. I do not find any merit to this allegation. The prevention of jamming in Aldington is clearly a secondary feature in the patent,

(Continued on next page)

sumption of validity of the '213 patent is strengthened in this respect, and Continental Can has not succeeded in overcoming this presumption. There is no reference in Aldington to resiliency of a stack of lids. Furthermore, the Z-configuration comprises the entire side wall of the lid, resulting in different structural interrelationships than in the '213 invention. Again, as with Flack, the fact that the Patent Office granted the '213 patent over Aldington strongly indicates its opinion that these distinctions are significant and patentable, and that the '213 invention was not obvious in light of Aldington and was not anticipated by Aldington.

Finally, Continental Can cites two patents of its own engineer, Miller—Miller, U. S. Patent No. 2,985,914 (May 30, 1961) and Miller, U. S. Patent No. 3,083,888 (April 2, 1963).⁶ The first of these patents related to a mold which formed the "7AB Special Cup," commercially produced in 1957, and involving a series of indented and inclined intrusions about the bottom of the side wall for stacking. The second patent related to the paper and plastic composite cup (paper with plastic bottom), which was designed and investigated by Miller in 1957, but never put into commercial production. This cup involved a segmented stacking configuration at the bottom of the

(Continued from preceding page)

and, furthermore, there are significant differences between the '213 invention and Aldington, even considering this stacking use to be a major object of that patent. I find no merit in Continental Can's speculation that the Patent Examiner would not have granted the '213 patent if this feature in Aldington had been made clear to him or in the further speculation that "unfortunately the Examiner was not sufficiently familiar with the Aldington disclosure to be able to refute the misrepresentation."

6. The patents were issued upon applications filed subsequent to November 29, 1957, the filing date of the '213 patent. On this basis, ITW contends that the Miller patents are not prior art with respect to the '213 patent. However, the evidence revealed that Miller actually designed and produced sample cups in the designs covered by these patents in the late spring and early summer of 1957. Thus, reduction to practice and "invention" occurred as of that time, prior to the '213 date of invention.

side wall similar to that in the 7AB special cup. Neither patent was cited by the Patent Office in the '213 file. Both these designs have been discussed previously in this opinion, and I have concluded that they did not constitute anticipations for lack of substantial identity. Furthermore, the '213 patent would not have been obvious to a person having ordinary skill in the art in 1957, on the basis of these designs. In the first place, these designs, as embodied in the two Miller patents, are clearly not as pertinent to the '213 subject matter as the Flack and Aldington patents, which were considered by the Patent Office, and they disclose nothing over Flack and Aldington which is relevant to the '213 invention. In the second place, evidence of non-obviousness is strongly supplied by Miller's failure, in light of his intimate knowledge of the Miller patents and in view of his skill in the art, to produce the '213 invention based on this and other subject matter before him in 1956 and 1957.

Continental Can further cites a number of "secondary patents" to illustrate "the extensive and widespread use of various forms of stacking ring configurations." None of these patents is nearly as pertinent to the '213 subject matter as the Flack or Aldington patents, both cited by the Patent Office, and none of the patents discloses any structure or feature which is significant with respect to the '213 subject matter beyond the disclosures of Flack or Aldington. Therefore, it is not necessary to discuss these patents with respect to nonobviousness under § 103. See, e. g., *Briggs v. M & J Diesel Locomotive Filter Corp.*, 342 F. 2d 573, 576-577 (7th Cir. 1965).

Continental Can also cites as prior art to prove the obviousness of the '213 invention its own extensive developmental activity in plastic container and cup designs from 1956 to 1958, conducted by its engineer Miller. This activity previously discussed in detail and rejected as anticipations, must also fail as evidence of the obviousness of the '213 invention. As previously stated, most of these various designs were merely experiments and were abandoned without the requisite public disclosure to

give them the status of prior art. The four cups which were placed in commercial production and apparently sold, with limited success, have also been previously described and discussed in detail. These cups involved various rim groove, double ring, and bottom segmented stacking configurations. Neither the rim groove (Continental Can's 7¼ V cup, produced and sold in late 1956, early 1957), nor the bottom stacking (the 7AB Special and composite paper-plastic cups, covered by the two Miller patents) is as pertinent as prior art as the Flack or Aldington patents, and disclose nothing of significance with respect to the '213 invention beyond those two patents cited by the Patent Office. These designs, when combined with any of the other prior art patents, or with Flack or Aldington, do not make the '213 invention obvious to a person having ordinary skill in the art, within the meaning of § 103.

The double ring cup produced commercially was the 7AB model "D production cup," which involved an upper Z-shaped stacking ring at the rim and under the rim overhang, as well as a lower segmented Z-shaped ring, both rings having oblique and rounded lower shoulders. The rim stacking configuration was expressly abandoned by Edwards in 1957, because of lack of success in producing an acceptable cup using this design. The use of a rim stacker, as opposed to stacking configuration located lower on the side wall, produces a different interrelationship between the cups when stacked than does the '213 configuration, and presumably leads to important differences in the functioning and use of the cups. The rim stacker was involved in the Flack patent, over which the '213 patent was granted although the distinction of rim-stacking was not argued before the Patent Office. When this feature is combined with a lower segmented ring, there are significant differences in appearance, and presumably in operation, from the '213 invention. I cannot conclude that the '213 invention would have been obvious to a person having ordinary skill in the art on the basis of the "D production cup," either singly or in combination

with other prior art patents and uses, as described above. This finding with respect to the "D production cup" is strengthened by the Patent Office's treatment of the Flack and Aldington patents, each of which, in their own way, was as pertinent as the "D production cup."

My conclusions with respect to all of the relevant developmental activity of Continental Can during 1956 to 1958 are underscored by the failure of Miller, who was conducting these various experiments and designing the various stacking configurations, to produce the '213 invention. Miller was actually more than a person of ordinary skill in the art; he was an expert and possessed high skill in the particular art of designing thin-wall thermo-formed plastic cups and containers. He had access to all of the developments, including those which were only "abandoned experiments." Some of the latter designs, particularly the food container designs involving an upper circumferentially continuous Z-shaped stacking ring located on the side wall below the rim, together with a lower segmented ring, were more pertinent to the '213 subject matter than any of the commercially produced cups, or than any of the prior art patents aside from Flack. Moreover, Miller had personal knowledge of the subject matter of a number of these prior art patents. Despite all of this knowledge and skill, Miller did not produce the '213 invention until 1962 or 1963, after ITW's cottage cheese containers had been placed upon the market and had met with commercial success. At that time, Miller switched to the '213 design of a single continuous Z-shaped stacking ring located on the side wall below the rim, and admitted that by doing so he had corrected "the one mistake" made in earlier designs.

Continental Can argues that on the basis of its various developmental activity "it is quite apparent that a person skilled in the art, such as Mr. Miller, would recognize the option of forming a Z-stacker ring either with circumferential continuity or circumferential interruptions as the use of such ring might require." Defendant's Post Trial Brief, p. 38. The short answer

to this argument is that Miller did not take this step at this time, leading to the conclusion, in light of his subsequent actions and admissions, that the step was not apparent to him. Taking Miller as a standard for measuring the ordinary skill in the art, it must be concluded that the '213 invention was not obvious at the time, and therefore that the patent is not invalid under § 103.

The combination of the various prior art patents cited by Continental Can does not provide evidence of obviousness. The most pertinent single prior art patent would appear to be Flack, which was cited by the Patent Office. Geuder's series of corrugations for stacking washtubs does not add to Flack with respect to the '213 invention. Pfalzgraf's use of a Z-shaped ring below the rim of the washtub does add an important disclosure to Flack, but the force of this is dispelled by the relative unimportance of this feature in Pfalzgraf and its nonrelation there to a stacking purpose. Similarly, Nowak may disclose a Z-shaped ring which would be significant when added to Flack, but again this feature in Nowak is unimportant and wholly undefined and unclaimed. Amberg involves only a lid seat, used to obtain a seal by tightly interacting with a container, and not referred to for stacking or other similar purposes. Aldington was cited by the Patent Office, together with Flack, and the combination of these patents was considered, before the '213 patent was granted. The presumption of its validity with respect to those patents is accordingly strengthened and not overcome by the evidence here. See, e.g., *Shumaker v. Gem Mfg. Co.*, supra, 311 F. 2d at 275. These various combinations do not demonstrate that the '213 invention was obvious. Again this conclusion is reinforced by using Miller as a standard of ordinary skill in the art.

ITW introduced evidence of the widespread commercial success of its cottage cheese containers over the last several years. Extensive sales of these containers have been made by ITW and by its licensees, both domestic and foreign. Several hundreds of thousands of dollars in royalties have been paid to ITW by the licensees. In general, ITW urges that this evidence is relevant

as a "secondary factor" to show the non-obviousness of the '213 invention. It is customary to evaluate and apply evidence of such secondary factors as commercial success, long-felt need, and failure of others in this fashion, and it has been generally stated that "[t]hese factors [are] entitled to weight in determining whether the improvement amounted to invention and should, in a close case, tip the scales in favor of patentability." *Goodyear Tire & Rubber Co., Inc. v. Ray-O-Vac Co.*, 321 U. S. 275, 279, 64 S. Ct. 593, 88 L. Ed 721 (1944). See also *Graham v. John Deere Co.*, supra, 383 U. S. at 17-18, 86 S. Ct. 684; *Kennatrack Corp v. Stanley Works*, 314 F. 2d 164, 168-169 (7th Cir. 1963).

With the evidence on the issue of nonobviousness so clearly in favor of ITW, I find no need to add the weight of the admitted commercial success of the ITW's container in order to tip the scales in this case.

6. *Lack of Specificity.*

Continental Can asserts that the claims of the '213 patent are invalid for failure to comply with 35 U. S. C. § 112, which provides, in pertinent part:

"The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

In particular, it is asserted that the claims of the '213 patent are directed to an aggregation of elements which do not have a co-operative relationship and furthermore that they are vague and indefinite. I do not find any merit in either of these assertions.

There is a cooperative relationship between the various elements in the claims. The bottom, rim, side wall and stacking ring are all necessary parts of the cup and cooperate together to perform a single function. The Z-stacker configuration, which has previously been defined as the essence of the invention, co-acts with these other elements to provide a practical and usable

plastic cup or container. See, e.g., *Church of Religious Science v. Kinkead Industries, Inc.*, 234 F. 2d 573, 576 (7th Cir. 1956).

Continental Can contends that the terms "substantially uniform thickness," "positively limit," "inclined," "resilient support," "axial resiliency," and "oblique," as used in particular in Claims 1 and 6 of the '213 patent, are vague and indefinite. Edwards' extensive testimony at the trial with respect to the subject matter of the '213 patent serves to refute this argument. Furthermore, Miller had no difficulty in understanding and applying the terms of the '213 patent when, at the trial, he compared the various features of the patent with those disclosures of the prior art patents and uses. In the context of the specification and of the surrounding language in the respective claims, these terms are not so vague and indefinite as to fail under § 112. Moreover, the claims are not "functional," as generally alleged by Continental Can. The language in the claims does describe the structure of the subject matter of the patent and does not fall into the vice of merely describing what the patent does or what defect in the prior art it meets. See, e.g., *General Electric Co. v. Wabash Appliance Corp.*, 304 U. S. 364, 58 S. Ct. 899, 82 L. Ed. 1402 (1938). Finally, the fact that the Patent Office fully considered and allowed these claims, as drawn, after extensive proceedings, is indicative of their sufficiency under § 112.

7. *Lack of Invention Based on Limited Novelty.*

Continental Can raises as a defense the contention that the '213 patent was so limited before the Patent Office, and consists of such a minor advance over the prior art, to be wholly devoid of invention. It is difficult to understand the legal basis for this contention. As the Supreme Court clearly stated in *Graham v. John Deere Co.*, supra, the requirement of invention for patentability is contained in § 103, dealing with the non-obviousness of the subject matter of the patent. As has been previously concluded, the particular subject matter of the '213 patent was not obvious under § 103. Further-

more, as has also been previously concluded, the subject matter was not anticipated; it was in fact new under § 102, and the requirement of novelty for patentability was present. The only additional requirement is that of utility, and Continental Can did not raise this issue.

It seems that Continental Can is attempting to apply as a standard of invention the concept of "inventive novelty." As has been recently and persuasively pointed out, this test was one created by 19th century judicial and treatise writers, and it would not seem to have survived the 1952 addition to § 103 to the patent statutes. See *Kitch, Graham v. John Deere Co.*: New Standards for Patents, 1966 Sup. Ct. Rev. 293. The decisions of the Supreme Court in *Graham v. John Deere Co.*, supra, and in *United States v. Adams*, 383 U. S. 39, 86 S. Ct. 708, 15 L. Ed. 2d 572 (1966), which equated "invention" with "non-obviousness" and which rejected old subtests of invention such as new result, (see *Walt Disney Productions v. Fred A. Niles Communications Center, Inc.*, supra, 369 F. 2d at 234) make clear that "inventive novelty," as asserted by Continental Can in this case, is no longer a valid test of invention.

I agree with Continental Can that the '213 invention is quite limited—perhaps simply to a single circumferentially continuous Z-shaped stacking ring configuration located on the side of a container below the rim and used in thin-walled thermo-formed plastic containers. However, the Patent Office indicated by its issuance of the patent over the Flack and Aldington patents, and by its determination that the subject matters of the '213 and '360 patents were distinct and different, so as to require a division, that the '213 invention was, as limited, new and unobvious. On the basis of the extensive exhibits, testimony and documents offered in this case, I concur in this determination by the Patent Office.

8. *Infringement.*

The test of infringement of a patent is a narrow one. As stated by the Court of Appeals for the Seventh Circuit: "Neither a literal application of claim phraseology nor similarity of result is sufficient to establish infringement. There must be a real identity of means, operation, and result." *Skirow v. Roberts Colonial House, Inc.*, supra, 361 F. 2d at 391. In this case, it is clear that this narrow test is satisfied and that Continental Can's cottage cheese container infringes Claims 1, 5, 6 and 9 of the '213 patent.

In the first place, Claim 1 of the '213 patent reads literally on Continental Can's cottage cheese container. The latter is a thin-walled thermo-formed plastic container, with bottom, rim and outwardly sloping side walls, and having a single circumferentially continuous Z-shaped stacking ring configuration located on the side wall below the rim. Secondly, Continental Can's container is so identical in size, appearance, shape and location of features, including the Z-shaped stacking ring, as to be virtually undistinguishable from cottage cheese containers manufactured by ITW and its licensees, which incorporate the '213 patent. The "means, operation, and result" of these containers are identical to those of ITW.

Continental Can argues that Claim 1 stresses the "resiliency" feature and contends that its product does not contain such a feature, but only has that resiliency inherent in the nature of the plastic material. However, as Edwards testified, this feature results from the Z-shaped stacking ring configuration, which acts as a spring to absorb shock when the containers are stacked in a column. Certainly there is some inherent resiliency in the plastic material, and the '213 specification recognizes this fact. However, where its product is identical in every respect with the '213 patent, and the latter clearly claims resiliency, Continental Can cannot disclaim this feature as a part of its product and seek to distinguish its product on this basis.

Continental Can renews here its contention that ITW is not entitled to the November 29, 1957, filing for Claim 1 of the '213 patent, on the basis that this application did not claim or specifically refer to resiliency. This contention has been previously discussed in this opinion, and it has been determined that resiliency was inherent in the November 29, 1957, application and that ITW is entitled to that date with respect to Claim 1 of the '213 patent.

Claims 5, 6 and 9 of the '213 patent are also infringed by Continental Can's cottage cheese container. These claims, as previously set forth, involve the use of one or more oblique shoulders in connection with the Z-shaped stacking ring. Edwards testified that in his opinion the lower shoulder of Continental Can's container was oblique, relative to the true horizontal. Admittedly, this deviation is slight and barely perceptible, especially when compared with the deviation on ITW's containers, which is at about a 45° angle. However, the camming feature of the oblique shoulder is also performed by a slight deviation, and the axial resiliency of a stack of containers is thereby enhanced. Continental Can's Director of Research for its Bondware Division, Mr. Richard Orthen, testified that its product did not use oblique shoulders, and that to his knowledge there was no deviation from the perpendicular (or horizontal). He further testified that the primary concern was with the prevention of jamming together of the containers, and that an oblique shoulder would merely act as a "lead-in or a funnel * * * to permit and actually guide the cup on top into a jamming position with the cup on the bottom." Transcript, p. 1816.

Nevertheless, a number of Miller's cup designs involved stacking rings having oblique shoulders, where the degree of obliqueness was no more apparent than in the presently manufactured cottage cheese container of Continental Can. Some of these cup designs were embodied in commercial production by Continental Can, most particularly in the "D production cup" in late spring or early summer of 1957. Miller testified that the shoulders in

these designs were oblique for purposes of achieving more direct centering of stacked cups. The deviation of the shoulders in these cups was also slight and the shoulders were somewhat rounded, as is the shoulder in the present Continental Can cottage cheese container. Moreover, as is indicated by these early cup designs, when Miller chose to make a shoulder absolutely horizontal, the shoulder was sharply defined and flat. Thus, I conclude that the lower shoulder of the Continental Can container is oblique within the meaning of that term in Claims 5, 6 and 9, therefore the product infringes those claims. The fact that some of Continental Can's employees did not intend to utilize this feature and were not concerned with resiliency does not preclude this feature from existing and from acting in the fashion described by Edwards and in the '213 patent.

The '139 Patent.

1. Subject Matter.

As described in the specifications, U. S. Patent No. 3,061,139 generally relates "to a package consisting of a container and closure therefor, and more particularly relates to a container and closure member which sealingly engage each other in a manner to provide a sanitary seal, but at the same time permits egress of gas from the interior of the container without dislocation of the closure member relative to the container." The '139 patent involves both the self-venting package, composed of a thin-wall plastic container and a separate snap-on and manually removable plastic lid, and the lid for use in this package. The container and lid normally contain separate sealing means and holding and venting means. The purpose of the package—and of the lid—is to provide for the egress of gas, when the package is filled with a gas-emitting substance, such as cottage cheese, without allowing the lid to "pop". This function is accomplished by use of holding and venting means, either in the design of the top of the container or in the design of the side-wall of the lid.

2. Background and Issues.

Prior to ITW's entry into the container field, Continental Can and others had been producing paper containers, either plain or wax-coated, for the dairy food industry. These containers were capped by a lid or closure made of paper, metal or plastic.

In late summer or early fall of 1959, ITW began to produce sample cottage cheese containers, embodying the '213 Z-shaped stacking ring configuration. These containers were market tested by the Borden Company and designed to be used with a standard plastic lid produced by the Lily-Tulip Cup Corporation. These tests disclosed that considerable "popping" of the lids occurred, during handling, storage or shipment of the filled containers of cottage cheese. ITW's Bryant Edwards was assigned to find a solution to this problem. Edwards first designed a lid with vents in the bottom of the bead to prevent air from being trapped during capping of the container. When this lid did not fully solve the "popping" problem, Edwards designed a modified lid, having vents extending through the upper portions of the beads. Samples of these lids were produced by Edwards in late October 1959 and in early November 1959. In December 1959, Edwards added a secondary venting feature to the lid.

In 1960, ITW's sub-contractor, Kleer-Plastics Company, commenced manufacture of a modified variety of these lids on molds and tooling owned by ITW, and this manufacture continued for about a year. At the conclusion of this period, Kleer-Plastics went out of business and ITW acquired the necessary machinery to manufacture the lid. Since this time, ITW has manufactured the lid, together with the container, and has also licensed domestic and foreign manufacturers to produce the lid as well as the container.

In late 1963 or early 1964, Continental Can commenced the manufacture and sale of plastic cottage cheese containers and lids. It has continuously manufactured and sold these products, with some modifications, since that time and does so at

the present time. The decision to enter this particular market was made after Continental Can had closely studied the activities of ITW and others for several years and after it had observed the increased penetration of the plastic cottage cheese container in the market.

The application for the '139 patent was filed on March 14, 1960, and the patent issued on October 30, 1962. The patent contains 13 claims, and, in the present suit, ITW asserts that Continental Can's product, consisting of the container and lid, infringes Claim 1 and Claims 3 through 13. Claim 1 covers the general structure of a self-venting package, composed of a one-piece container with an open end, defined by a circumferential rim, and a one-piece snap-on manually removable lid, adapted to be inserted within and retained on the container. The container has a portion of its continuous side wall adjacent to the open end which is offset radially outwardly relative to the rest of the side wall. The lid itself is flat on the bottom and has a raised side wall with sealing means to co-act with the container means. The raised side wall on the lid has an outwardly and downwardly extending curl at the top, so that the lid fits inside the top of the container, with the outside of the lid side wall resting against the inside of the top portion of the container side wall and with the curl at the top of the lid side wall extending over and around the rim of the container. Either the lid side wall or the container side wall, where in contact with the lid side wall, has a combination holding and venting means portion, which is arranged so as to be "downstream" of the sealing means portion of these side walls (in effect, located above the sealing means portions). When gaseous material within the container causes the sealing means to disengage each other, the holding and venting means function to hold the container and lid together while permitting egress of the gas under pressure.

Claim 3 deals with the package where the combination holding and venting means is integrally formed in the one-piece

snap-on lid. Claims 4 and 5 deal with such a package with the sealing means located vertically below the holding and venting means and with the sealing means located below and separated from the radially outwardly extending portion of the container side wall, respectively.

Claims 6 through 11 of the '139 patent deal with several different particularized embodiments of the package and of the lid for use with the package. These differences are minor and each embodiment includes a plastic container having an internal circumferential groove located in its side wall adjacent to the upper open end and a plastic self-venting lid with various sealing and holding and venting configurations located in its side wall. The sealing is achieved by engagement between a protruding bead or other configuration at the bottom and side-wall edge of the lid with the lower shoulder of the groove in the container. Above this (or "downstream" of it) there are holding and venting means, normally on the lid, to permit gas to escape when pressure builds up but to prevent axial movement or dislodgement of the lid. Essentially, the operation of the package is the same in each claim: the pressure of the gas bows the bottom of the lid, breaking the seal. The holding and venting means then holds the lid in place while the gas escapes past it. As the pressure is relieved, the bottom of the lid returns to its normal position and the sealing means between the lid and container are again in contact. The holding and venting means are variously located opposite the upper shoulder of the container grooves, i.e., in the lid, or as a part of that groove, or opposite or as a part of the radially outwardly offset portion of the side wall of the container, which is adjacent to the upper edge. In all embodiments, these holding and venting means are located above (or "downstream" from) the sealing means. As depicted in Figure 1 of the '139 patent and as embodied in the exhibits of the packages and lids introduced at the trial, the holding means consists of an internal groove in the container and the bead of the lid, which two configurations fit

together, and the venting means consists of the space between certain spaced and raised ribs or lugs located on the upper portion or edge of the bead on the lid.

Claims 7 and 10 deal with this general structure where a secondary holding and venting means is also provided, so that one such means exists on the bead and upper edge of the bead of the lid and the second exists on the side wall of the lid opposite the radially outwardly offset top portion of the container side wall. Alternatively, such secondary means can be located on this radially outwardly offset top portion. In the exhibits, this secondary holding and venting means consists of spaced ribs or lugs on the vertical section of the side wall of the lid, located above the bead and under the overhanging curl of the rim of the lid. According to the specifications:

"The [secondary] rib portions * * * prevent a secondary seal * * *. Without the ribs, a seal in this area sometimes occurs, particularly if the filling mechanism for packaging the food stuffs might leave a slight film of milk or cream or similar substance which might cause a seal even though the dimensions of the lid are made such that contact will not ordinarily occur in this area."

Claim 12 of the '139 patent deals with a self-venting lid, and Claim 13 with a self-venting package. In contrast to the other claims of the patent, these two claims do not involve any sealing means on the lid or container. Thus, there is no sealing and resealing, but only a holding and venting means which permits continuous venting without axial movement or dislodgement of the lid.

Continental Can asserts generally as a defense and as a basis for its counterclaim that the '139 patent is invalid and therefore cannot be infringed. In particular, as grounds for this assertion of invalidity, Continental Can alleges first that Claims 12 and 13 of the '139 patent are invalid in that they were added to the patent application more than one year after the alleged invention had already been on sale and in public use and further

in that these claims cover a concept of the alleged invention that was not a part of the original disclosure when the original application was filed on March 14, 1960. Secondly, Continental Can alleges that the '139 patent is completely invalid because it was fully anticipated by prior art patents and developments by Continental Can and others, under §§ 102(a) and 102(b), and further that the '139 patent was obvious to a person having ordinary skill in the art, under § 103. Finally, Continental Can asserts that in any case its product is significantly different from any of the various embodiments of the '139 patent, contained in the various claims of that patent in this suit and therefore does not infringe the '139 patent.

3. *The Asserted Invalidity of Claims 12 and 13 of the '139 Patent.*

Basing its argument on the file wrapper history of the '139 patent, Continental Can initially asserts that Claims 12 and 13 of the patent are invalid, in that these claims added new material to the patent which was not disclosed in the original application and further that ITW first began to sell the invention disclosed and claimed in the '139 patent in about February 1960, which was more than one year prior to the addition of Claims 12 and 13 on March 22, 1961, and July 23, 1962, respectively. In particular, Continental Can asserts that the original application disclosed and dealt only with holding and venting means used in conjunction with sealing means, and that contact between the lid and container was essential to the invention disclosed in the original application. It is further asserted that Edwards, in argument before the Patent Office, specifically referred to the sealing feature and made no reference to continuous venting, as contained in Claims 12 and 13. Continental Can argues on the basis of these assertions that the two claims are invalid under § 102(b), since there was a placing on sale and public use of the invention more than one year prior to the addition of these claims. ITW counters this argument with the assertion

that the subject matter of Claims 12 and 13 was fully disclosed by the original drawings and specification of the '139 patent, and that the subsequent claiming of this subject matter is entitled to the original filing date, March 14, 1960, which was less than one year after the first sales and uses of the '139 invention.

For legal support of this argument dealing with Claims 12 and 13 of the '139 patent, Continental Can relies upon the holding of the Supreme Court in *Muncie Gear Works, Inc. v. Outboard, Marine & Mfg. Co.*, 315 U. S. 759, 62 S. Ct. 865, 86 L. Ed. 1171 (1942). In *Muncie Gear* the Court held invalid certain claims relating to an "anti-cavitation plate" used to prevent air from being sucked into the propeller area of high-powered outboard motors, which claims had been added more than two years' after public use and sale of the particular motor with the plate by the patentee. The Court stated that the original application "in no way suggested the combination now asserted as * * * invention," and reviewed the drawings, specification and claims to reach this conclusion. 315 U. S. at 761, 62 S. Ct. at 866. Where the new claims were added, the patentee also filed an amendment to the specification dealing generally with this plate. Thus, the Court held that the intervening rights of the public, by virtue of the public use or sale of the device claimed by the particular claims, invalidated those claims.

The present situation is distinguishable on two grounds. In the first place, it is not alleged nor shown that ITW's sales of its package in 1960 involved continuously venting packages, as claimed in Claims 12 and 13. It would seem, from the evidence of ITW's initial use of wholly sealed packages, from Edwards' efforts to develop resealable packages, and from the fact that ITW has continuously sold and sells packages which seal, vent and reseal, as opposed to continuously venting packages, that its first sales in 1960 involved packages which sealed, vented and resealed. Continental Can's arguments, to the effect that the continuously venting package is altogether different and consti-

7. The present time-bar period under § 102(b) is one year.

tuted new matter when added to the '139 application, defeat its own argument as to the applicability of *Muncie Gear*. Based on these arguments of new matter, there were no intervening public rights with respect to the continuously venting package by virtue of ITW's sales in 1960 since that particular device was not sold at that time. See, e.g., *Sears, Roebuck & Co. v. Jones*, 308 F. 2d 705, 708 (10th Cir. 1962); *Pursche v. Atlas Scraper & Engineering Co.*, 300 F. 2d 467, 476 (9th Cir. 1962).

Even more importantly, it is clear that the present case does not fall within the ambit of *Muncie Gear* since the continuously venting feature was disclosed in the original '139 application. That case does not prevent amendments, to claim, specifically, features which were fully disclosed but not claimed in the original application. See, e.g., *Engineering Development Laboratories v. Radio Corporation of America*, 153 F. 2d 523, 526 (2d Cir. 1946).

While Edwards was concerned with the problem of sealing, venting and resealing, and his first claims dealt with the use of sealing means together with holding and venting means, the use of the latter alone is disclosed and obvious from the drawings, specification and claims, as originally filed on March 14, 1960. The holding and venting means are separately described and depicted and are not necessarily restricted to combination with the sealing means. The concept of continuous venting is readily apparent in this application, and the situation of *Muncie Gear*, where the original application wholly failed to describe or to disclose the new use of a plate which was old in the art in combination with other features, does not exist here. See, e.g., *Coats Loaders & Stackers, Inc. v. Henderson*, 233 F. 2d 915, 922-924 (6th Cir. 1956).

4. Anticipation and Obviousness.

In connection with the '139 patent, Continental Can cites various prior art patents and prior art uses, including its own activities and those of others, to invalidate the patent. Conti-

ental Can does not divide these prior references between those urged as full anticipations of the patent under §§ 102(a) and 102(b) and those urged as demonstrating the obviousness of the '139 invention to a person having ordinary skill in the art under § 103, as it did for the '213 patent, but urges these prior references generally, both as anticipations and as evidence of obviousness. Since these tests require a similar analysis of the prior art and comparison with the present patent, I will discuss all of the prior art at this time, with respect to both tests. Of course, as stated above with respect to the '213 patent, anticipation is a narrower and more stringent test than obviousness, requiring a virtual identity of the individual prior art reference with the subject matter of the present invention. It should also be noted that the discussion above, in connection with the '213 patent, of the presumption of validity of a patent and the strengthening or weakening of this presumption on the basis of prior art cited and not cited, respectively, by the Patent Office, fully applies here to the '139 patent. Similarly, the preceding discussion as to the scope of the prior art and the knowledge attributed to the inventor and to a person skilled in the art, for purposes of determining non-obviousness, is fully applicable here to the '139 patent.

Continental Can cites five "primary" prior art patents. The first of these is Mumford, U. S. Patent No. 2,953,272 (September 20, 1960), entitled "Closure Caps for Bottles and Jars." This patent relates to the use of thermoplastic caps on glass bottles and jars to provide venting means to permit the "maintenance of safe internal pressures without leakage of the contents." The cap is of the snap-on variety and designed to co-act with the glass walls of the bottle or jar so as to provide a seal. The cap is in several parts, consisting of a relatively heavy semi-rigid ring, an attaching skirt, a resilient concavo-convex diaphragm located within the ring, an annular radial flange formed internally as an integral part of the ring and an annular inclined wall connecting the radial flange and diaphragm to seal with the inner surface of

the container mouth. The heavy ring fits over and around the top rim of the bottle or jar and forms a seal by its contact on the inside edge of the rim of the bottle or jar. The purpose of this cap is to seal, vent and reseal. When internal pressure rises in the bottle, the diaphragm is bowed upwards and causes the ring to come out of contact with the inside of the bottle rim and the seal is broken. The cap is still firmly attached by the pressure of the ring on the outside of the bottle below the rim. When the seal is broken, the gas escapes into certain channels which radiate outwardly over the rim and down the side of the bottle, which channels lie between the ring and the side of the bottle. These channels permit the gas to exit into the atmosphere, reducing pressure in the bottle. Thus, pressure on the diaphragm is reduced and it returns to its normal position, restoring the seal.

While Mumford involves generally a snap-on plastic cap with sealing means and with separate holding means and venting means "downstream" of the sealing means, it does not utilize an integral holding and venting means. Moreover, it does not deal with a grooved plastic container or with a one-piece cap. The cap uses special grooves or channels and other special configurations for venting.

The second patent cited by Continental Can is Aldington, U. S. Patent No. 2,985,354 (May 23, 1961), entitled "Self-Conforming Cover for Containers." This patent was cited by the Patent Office in the file of the '213 patent, and is also urged by Continental Can as an anticipation or evidence of the obviousness of that patent. As pertinent to the subject matter of the '139 patent, Aldington involves the use of a thin thermo-formed plastic cover (or of similar thin and flexible material) to close food containers, such as containers utilized for packaging ice cream, cottage cheese, potato salad and the like. This cover is designed to co-act with a groove about the top of the container side wall and accomplishes this by contact between the edge of the cover's side wall and bottom with the groove in the container side wall. The cover further has a raised side wall which

makes additional contact with the inside of the container side wall, at the very top of the latter, about the inside of the rim, and the cover's side wall also extends over and about the rim of the container. The cover has an annular groove located in its bottom and forming a circle about the bottom near its edge. This groove permits the bottom or diaphragm to flex and bulge "in the event of an accidental overflow of the container, or in the event there is an unexpected air content in the container at the time of application of the cover." Neither the cover nor the container provide for, or refer to, any venting or resealing properties. Indeed, the patentee's stress in the specification to preventing leakage or spillage by firmly affixing the cover to the container "with a resilient pressure insuring annular sealing regions at a plurality of different locations" demonstrates his concern with a firm and unbroken seal.

The Doe patent, U. S. No. 2,286,070 (June 9, 1942), cited by Continental Can, relates to paper bottle caps for use on milk bottles. These caps are of the cover-all type, in that they fit over and around the rim of the bottle. The cap has a diaphragm or bottom, seated inside the bottle, and certain grooves leading from the upper side of the diaphragm to the outside. When, due to changes in temperature, the milk or cream in the bottle expands, this expansion will cause the diaphragm to rise, permitting the liquid to escape through notches in the side of the diaphragm and then through the grooves leading over the top of the cap and allowing the milk to run down the side of the bottle. The cap itself remains in position, due to its pressure on the outside of the bottle, and theoretically the diaphragm "snaps back and reseals the bottle, thereby preventing leakage and eliminating the possibility of contamination from the outside."

8. There is some doubt as to whether Doe actually does reseal. Testimony by Continental Can's witness, Ward Coe, was to the effect that in this type of cap, the cap structure rises with venting and requires some external pressure to restore it to its original position.

Continental Can also cites Goodwin, U. S. Patent No. 2,279,263 (April 7, 1942) and Kempe, U. S. Patent No. 2,223,321 (November 26, 1940). Goodwin relates to a paper milk bottle cap, of the cover-all variety, having a diaphragm and a number of recesses or cavities formed on top of the diaphragm. When the liquid expands, these recesses permit the diaphragm to expand as well, and the milk or cream flows over the rim and down the side of the bottle. This cap does not reseal but is intended to remain in place to maintain the contents in a sanitary condition. Kempe relates to a bottle cap, presumably of paper, and means for making such, for use on milk bottles. The cap is also of the cover-all variety and has grooves for continuous venting of air or gas.

A number of "secondary" prior art patents dealing with various closures and venting means involving gaskets and other devices on different products were also cited by Continental Can. However, these patents were relied upon generally to demonstrate "the advanced state of the art" in sealing and venting devices with respect to the obviousness of the '139 invention and not as anticipations. I do not find that these patents add anything pertinent to the '139 invention which is not covered and disclosed by the "primary patents" and therefore do not find it necessary to discuss them in detail. Continental Can does cite, as a secondary patent, Stewart, U. S. Patent No. 2,109,805 (March 1, 1938), and contends that this patent, cited by the Patent Office in the '139 patent file, was the principal reference relied on by the Patent Office in considering the '139 patent. Continental Can argues from this contention that the Patent Office did not have the best or most pertinent prior art before it in considering the '139 patent, and that any of the "principal" prior art patents relied upon here are obviously more pertinent to the subject matter of the '139 patent than Stewart.

Stewart deals with a pry-off cap and container, with the cap being made of metal and the container made of glass. The

cap is designed so that it can be snapped onto the container, with overlapping lugs which hook over a bead on the outside of the rim of the container. A rubber gasket inside the cap is brought into contact with the top of the rim of the container when the lugs snap the cap into place and thereby provides a seal. The primary use of this cap and container would appear to be in a canning process, where heat is applied after packaging, resulting in the development of high internal pressure. Such pressure causes the cap to lift slightly and the lugs to ride upwardly and outwardly. As the lugs do so, they exert a downward pressure upon the cap skirt and venting occurs between the gasket and the rim of the container. This venting is permitted by the fact that the gasket, having been compressed by the pressure of the cap in normal sealed position, is indented by the rim and, being composed of a low resilience material, returns slowly to its original flat form. The lugs subsequently snap back into position and the container is resealed.

While it can be argued, as Continental Can does, that Stewart is readily distinguishable and non-pertinent to the '139 subject matter in that Stewart involves a separate gasket and venting depends upon the special composition of this gasket, it is apparent that the general principle of the '139 patent is embodied in Stewart, as well as in Continental Can's "primary" prior art patents, such as Mumford and Doe. This principle is that of providing for sealing, venting and resealing, with the sealing means located "upstream" from the venting and holding means. The venting means and holding means are not combined in Stewart, as they are in the '139 patent, but neither are they combined in Mumford or Doe. Moreover, Stewart involves venting about the whole gasket and around the entire rim, and in that respect is more pertinent to the '139 patent than Mumford or Doe, which utilize special grooves and channels for venting. Thus, it can be readily argued that Stewart is as pertinent to the '139 subject matter as Mumford or Doe, and certainly more pertinent than Goodwin or Kempe, both of which contain

all of the features above enumerated with respect to Mumford and Doe and in addition do not provide for resealing.

Moreover, the file wrapper of the '139 patent does not reveal that Stewart was the principal reference relied upon by the Patent Office, as contended by Continental Can. Stewart was cited with other patent references only against two claims in the second Official Action, and these claims were subsequently cancelled. The file wrapper does reveal that the Patent Office cited Flack, U. S. Patent No. 2,972,432 (February 21, 1961), Hancock, U. S. Patent No. 2,881,368 (April 7, 1959), and Kroenert, U. S. Patent No. 2,858,955 (November 4, 1958) as principal references. These patents are at least as pertinent as Mumford, Doe and Aldington, and more pertinent than Goodwin or Kempe. Flack, in particular, relates to one piece, snap-on, thin-wall thermo-plastic closure lids for use in closing paper food containers, such as cottage cheese containers. The containers have a groove and the bead of the lid co-acts with this groove, providing a seal. Furthermore, the bottom of the lid has an annular groove about its edge. Thus, Flack discloses every feature that Aldington does. Hancock relates to a venting cap for an electrolytic condenser, and is in several parts. On this basis, it is analogous to the milk bottle caps cited by Continental Can, and especially to Mumford or Doe.

Continental Can argues that the '139 patent is fully anticipated by Mumford or Doe or by Aldington, if the latter is modified to provide venting in light of Mumford or Doe. I do not find either Mumford or Doe to be an anticipation, under §§ 102(a) and 102(b), of the '139 patent. Both Mumford and Doe involve heavy glass bottles or jars without internal grooves together with cover-all caps having special channels or grooves for venting. These patents are clearly distinguishable from the '139 patent. Similarly, Aldington is distinguishable from the '139 patent, in that it involves no venting or resealing. Aldington is similar to the Lily-Tulip lids which ITW initially used on its cottage cheese containers and which, by "popping,"

provided the impetus for the '139 patent. Moreover, the proposed modification of Aldington would be contrary to the purposes of that invention and contrary to the concept and design of the inventor. Under these circumstances, Aldington does not anticipate the '139 patent. See, e. g., *Topliff v. Topliff*, supra, 145 U. S. at 161, 12 S. Ct. 825; *Copease Mfg. Co. v. American Photocopy Equipment Co.*, supra, 298 F. 2d at 779.

Furthermore, I do not find that the subject matter or any of the claims of the '139 patent would have been obvious on the basis of the above-cited prior art patents to a person having ordinary skill in the art in 1960, under § 103. Continental Can's Miller testified that in his opinion all of the structural features in the various claims of the '139 patent are present in the individual teachings of Mumford, of Doe and of the modified Aldington closure, and further that the modification of Aldington (to provide suitable vents) was clearly suggested by the teachings of either Mumford or Doe. However, such testimony would seem to be based on hindsight, especially in light of Miller's own extensive experiments with thermo-formed plastic containers and his unsuccessful efforts to produce an acceptable plastic lid, with venting, for use in hot beverage cups. Moreover, the citation by the Patent Office of the equally pertinent prior art patents such as Flack, Hancock and Stewart and its issuance of the '139 patent over these references indicates that its opinion, in 1962, were contrary to the position now taken by Miller. The milk bottle cap patents such as Goodwin and Kempe are distinctly different from the '139 invention and do not disclose any feature pertinent to the '139 invention which is not disclosed in Hancock or Stewart. Similarly, Hancock and Stewart fully meet Mumford and Doe, and the suggested modification of Aldington is fully met by Flack together with Hancock and Stewart. For those reasons, I find that the most pertinent prior art patents were before the Patent Office and were fully considered before the '139 patent was granted. None of these prior art patents, either those cited by the Patent Office or those

relied upon by the Continental Can, involved a one-piece, snap-on, thin-wall plastic lid with sealing means and combined holding and venting means, as in the '139 patent. Furthermore, the development of such a lid, or package, would not seem to have been obvious in 1960 from a combination of these various prior art patents. This conclusion is reinforced by the fact that the Patent Office considered the most pertinent prior art patents and reached the same conclusion. On this basis, the presumption of validity is fully in effect and has not been overcome by Continental Can.

Continental Can also introduced evidence of various prior art uses by itself and others, involving closures and lids. These uses are also cited both as anticipations and as evidence of the obviousness of the '139 invention. Three categories of such uses are cited. The first is Continental Can's own prior activities, in 1956 and 1957, relating to the development of plastic lids for its hot drink cups. These activities were carried on by Miller and involved the design and testing of a plastic lid having a bead to fit into the groove on the container and with vents in the bead. This lid was not found to be acceptable and was abandoned prior to any commercial use. Continental Can reverted to a simple lid with a hole in the center for its commercial product. In accordance with the principles previously discussed with respect to the '213 patent, it is clear that this vented lid did not advance beyond the stage of experimental use and was abandoned before it became a practical and useful product, even in the laboratory. As such, it is without status as prior art for purposes of anticipation or evidence of obviousness. See, e.g., *Corona Cord Tire Co. v. Dovan Chemical Corp.*, supra; *Gayler v. Wilder*, supra.

The second category of prior uses relates to the use of vented milk bottle caps by the Smith-Lee Company. Smith-Lee has manufactured and sold such caps from 1945 through the present time. These caps are similar to those covered by the Kempe and Goodwin patents (Kempe was in fact an employee of Smith-

Lee) and are similarly designed to raise slightly, thereby permitting venting to occur. Vents exist on the edge of the plug section, and on some styles a center vent also exists. However, these caps do not re-seal and do not have integral holding and venting means. They are not composed of plastic or of an analogous substance and are not designed to be used with thin-wall plastic containers. The same stresses, pressures and requirements which exist in the '139 patent are not involved. I do not find that these caps are any more pertinent than, or add any pertinent disclosure over, the Kempe or Goodwin patents and therefore fail as anticipations or as evidence of obviousness.

Continental Can further recites certain prior developments by the Sterling Seal Company, involving the design of vented metal lids for cottage cheese containers. In this connection, the evidence showed that Sterling had manufactured and sold metal lids for cottage cheese containers since 1955. It encountered lid-popping problems and a drawing showing the location of the vents through the bead of the lid was produced by an engineer of Dixie Cup as of October 9, 1959. Some samples were produced later in October and were sent to Sterling. The first commercial order was received by Sterling in January 1960, and vented lids were shipped in February 1960. It is clear from the evidence that these lids were still in the initial stages of experimentation in October 1959, and had not been reduced to practice at that time. There was considerable confusion between Sterling and Dixie Cup as to the exact purpose of the vents. However, even assuming that there was a sufficient reduction to practice so that these lids can be considered as prior art against the '139 patent, which would appear to have been reduced to practice in November or December of 1959, the Sterling lids are not sufficiently identical to constitute a prior use or knowledge of the '139 patent and furthermore do not necessarily render the '139 patent obvious, under § 103. This lid did not have an integral holding and vent-

ing means and its composition out of metal would give it significantly different characteristics and action than the '139 patent.⁹

ITW also introduced evidence of the extensive commercial success of its cottage cheese package, and apparently also argued this point to the Patent Examiner. In light of the variety of other available and inexpensive packages for a product such as cottage cheese, this evidence does have probative value on the usefulness and desirability of the all-plastic container. Thus, it is entitled to some weight, as a secondary factor, as to the non-obviousness and novelty of the '139 patent. See, e.g., *Graham v. John Deere Co.*, supra, 383 U. S. at 17-18, 86 S. Ct. 684; *Goodyear Tire & Rubber Co., Inc. v. Ray-O-Vac Co.*, supra, 321 U. S. at 279, 64 S. Ct. 593.

In sum, then, I do not find that any of the various prior art patents or uses discussed above was sufficiently identical to the '139 patent to constitute an anticipation of that patent. The subject matter of the patent was in fact new and had never appeared before Edwards' development of the container and self-venting lid. Furthermore, I do not find that this prior art, both patents and uses, would have made the subject matter of the '139 patent obvious to a person having ordinary skill in the art in 1960. Assuming that the relevant art included all of the various closure devices cited, the combination of the various elements of these into the '139 invention was not obvious. Moreover, as the previous discussion reveals, not every element was present in the prior art. Many of these prior art patents and uses involved entirely different subject matter and problems. The adaptation of those solutions and devices to the new area of plastic containers cannot be said to have been obvious. To be

9. Continental Can notes, and notes correctly, that the '139 patent does not specify the nature of the material from which the lid is composed. It does specify that the container is thin-wall plastic. However, in light of the emphasis throughout the patent prosecution and the present suit on the light-weight resilient nature of the lid, it is reasonable to interpret it as limited to one of plastic or closely similar material. A metal lid can be distinguished on this basis.

sure, it can be argued that since this was a new area, no one had been previously faced with these particular problems and requirements. This does not overcome the fact that Edwards was the first to find the solution or the fact that the ITW container has since met with commercial success, and that other manufacturers, including Continental Can, have entered this market with similar products. As is the case with the '213 patent, I will agree that the '139 patent is limited and should be narrowly construed. Perhaps it covers only a one-piece, snap-on, thin-wall plastic lid, with sealing means and integral holding and venting means, when used with a thin-wall plastic container, together with such a package. However, as so limited, it is new and non-obvious, and constitutes a valuable and useful contribution to the art.

5. *Infringement.*

As previously stated, the test of infringement is a narrow one, requiring "a real identity of means, operation, and result." *Skirow v. Roberts Colonial House, Inc.*, supra, 361 F. 2d at 391. This test is satisfied with respect to the '139 patent, and it is clear that Continental Can's cottage cheese package and self-venting lid infringe Claims 1, 3-13 of the '139 patent, as alleged by ITW.

Continental Can's package consists of a thin-wall thermoformed plastic container and lid. Both the container and the lid are in one piece. The container has a groove located on the inside of the side wall just below the rim, which engages the bead located on the bottom edge of the side wall of the lid. The top portion of the side wall of the container is "offset radially, outwardly relative to other portions" of the side wall. The lid is in one piece and is designed to be snapped on and manually removed. It has a bottom section and side wall, with the latter extending over and about the rim of the container so that the package is sanitary. Furthermore, and more importantly, the Continental Can lid has an integral holding and venting means, which is located "downstream" from the sealing means. The

holding means consists of the lid bead, co-acting with the groove in the container, and the venting means consists of four grooves which cut into the side of the lid bead. Sealing is accomplished by co-action between the lower edge of the lid bead and the lower shoulder of the container groove. Finally, the Continental Can package also has a secondary venting means, composed of four grooves cut into the radially outwardly extending side wall portion of the container, which function to permit venting and to prevent formation of a seal in that area. The package functions to permit venting without axial movement or dislodgment of the lid. These are the elements of the '139 patent and are claimed by Claims 1, 3-7 of that patent, as to the package, and by Claims 8-11, as to the lid. Continental Can's product is indistinguishable in appearance and is identical in the means employed.

Primarily, Continental Can argues that its product does not infringe Claims 1, 3-11 of the '139 patent since its product, by means of the grooves in the lid bead, vents continuously, and does not seal, vent and reseal. ITW admits that if this were the case, there would be no infringement of these claims; since they involve sealing, venting and resealing, but contends that Continental Can's product vents continuously only in the "dry" state, when empty or used with non-liquid or non-moist contents, and does seal, vent and reseal when used for its intended purpose—i.e., to hold cottage cheese. In support of the last contention, ITW introduced evidence or certain manometer tests indicating that most of Continental Can's packages when filled with cottage cheese, and thus in a "wet" state, did seal, vent and re-seal.

First of all, I agree with ITW that the Continental Can package must be regarded in the context of its normal and intended use. This use is the holding of cottage cheese and similar dairy food products. The operation and status of the product when empty and not being put to its intended use or when used theoretically to hold a "dry" product, which also is not its intended and normal use, is irrelevant. Obviously, the '139 package also

does not seal, vent and reseal when empty or used to hold a "dry" product.

The theory of ITW is that the cottage cheese in the Continental Can package produces moisture and gas which collect in the groove of the container and form a seal with the lower edge of the lid bead. Such a seal normally forms in the Continental Can package, despite the nature of its vents, and does so as a result of packing, handling and so forth. In fact, some of the cottage cheese itself normally spills or seeps into this groove. Since the groove and lid bead are in contact, this moisture need only close off the four small vents to accomplish a seal. I find that this is a completely plausible explanation and that it was fully borne out by the evidence of the sealing, venting and re-sealing presented in this case. In all respects, as to location, operation, principle and result, this functioning of Continental Can's package is identical to the '139 patent, and particularly to Claims 1, 3-11 of that patent. Therefore, this package infringes those claims. Finally, it is also clear that Continental Can's package infringes Claims 12 and 13 of the '139 patent, which do not require a sealing means but deal with a continuous venting and holding means, which prevents dislodgment of the lid. The bead of the lid in both the Continental Can package and Claims 12 and 13 functions as the primary means for such venting and holding,¹⁰ and there is identity of means, operation and result.

* * * * *

Claims 1, 5, 6 and 9 of the '213 patent are valid and are infringed by Continental Can. Claims 1, 3-13 of the '139 patent are also valid and infringed by Continental Can. In addition, while some evidence was offered by ITW in support of its contention that Continental Can copied the '213 and '139 patents, I do not find this evidence sufficient to justify a finding of bad

10. Continental Can does contend that holding is also accomplished on its product by contact between the upper sidewall section of its lid and the side of the container, in the area of secondary venting. However, it is clear that this is only "secondary" holding, and would not alone prevent axial movement or dislodgment of the lid.

faith or wanton and wilful infringement. Thus, I do not find that this case is a proper one for imposition of extraordinary damages under 35 U. S. C. § 284. Also, this is not an "exceptional case" justifying an award of attorney's fees under 35 U. S. C. § 285.

Plaintiff ITW is directed to prepare and present an appropriate judgment order on or before July 21, 1967.

UNITED STATES COURT OF APPEALS

Seventh Circuit.

July 8, 1968.

Rehearing Denied Sept. 10, 1968.

ILLINOIS TOOL WORKS, INC.,

Plaintiff-Appellee,

vs.

CONTINENTAL CAN COMPANY, INC.,

Defendant-Appellant.

No. 16500.

Before DUFFY, Senior Circuit Judge, and KILEY and SWYGERT, Circuit Judges.

KILEY, Circuit Judge.

This is a patent infringement action seeking damages and injunctive relief against Continental Can Company, Inc. (Continental). The district court found the patents in suit valid and infringed, and entered an order requiring an accounting and restraining Continental from further infringement.¹ The injunction and accounting were stayed pending appeal. We affirm.

Plaintiff Illinois Tool Works, Inc. (Illinois Tool), a Delaware corporation, with principal place of business in Illinois, is assignee and owner of Edwards Patent # 3,139,213 (# 213) covering nestable thin wall plastic drinking cups; and Patent # 3,061,139 (# 139) covering a self-venting plastic container and lid, used primarily to contain cottage cheese. Illinois Tool's Conex Division manufactures and sells the products covered by the patents. Continental's Bondware Division manufactures and sells the accused plastic cups and containers.

1. The court denied Illinois Tool's request for attorneys' fees and treble damages for willfulness.

Continental defended on the usual grounds of invalidity and non-infringement. Invalidity was asserted on the grounds of anticipation by the prior art, obviousness, vagueness of the Edwards claims and lack of "inventive novelty." The non-infringement defense was based on alleged differences between the Continental nestable cups and plastic cottage cheese containers and the plaintiff's patents; and file wrapper estoppel based on Edwards' abandonment of certain claims in the Patent Office.

The district court in a 107-page memorandum found that the prior art patents and uses were not sufficiently identical to the Edwards patents to constitute anticipation; that the evidence "clearly" favored Illinois Tool on the issue of obviousness; that the claims were sufficiently defined; and that "inventive novelty" is no longer a valid test of inventiveness and that the patent is "new." On infringement, the court found the "means, operation and result" of Continental's nestable cups identical to those of plaintiffs; and that its cottage cheese container was "in all respects * * * location, operation, principle and result" identical to plaintiffs. The court's judgment concluded that plaintiff's #213 patent claims 1, 5, 6 and 9 were valid and infringed, and plaintiff's #139 claims 1 and 3 through 13 were valid and infringed.

#213

Patent #213² issued June 30, 1964, upon application filed December 13, 1962. The application stated that the object of the patent was "to provide a cup, particularly a throw-away cup, which is so configured that a plurality of such cups can be stacked in telescopic relation without wedging together." This stacking capacity, called nesting, is well known in the art and is commonly observed in vending machines used for dispensing liquid in plastic drinking cups. Stacking rings are used to minimize the degree of contact between cups in the stack and thereby prevent the cups from becoming wedged together.

2. Patent No. 139 was developed earlier, but issued later, than No. 213.

The design of Illinois Tool's principal cup, one of five embodiments of patent #213, is of a thin walled plastic cup with a body that tapers upward and outward from a recessed bottom to a lipped top. On the outside of the cup between the top and center of the body is a series of step-like cylindrical rings circling the cup. The walls of the top ring incline up and in, forming a horizontal shelf at both the top and bottom of the ring in a Z-configuration. When stacked, the lower shelf of the top ring of one cup is supported on the upper shelf of the top ring of the next lower cup. The result is that when stacked, only the surfaces of the shelves are engaged, and the cups are nested but not wedged. The lower rings in the series are "gripping rings" which prevent the cup from slipping from the hand of the user.

The district court found that the 213 patent calls for a single circumferentially continuous Z-shaped stacking ring configuration located below the rim on the side wall of a thin wall plastic cup. It concluded that this stacking arrangement provides protection against the wedging of stacked cups while at the same time utilizing the natural flexibility of thin wall plastic to cushion shocks and thereby prevent cup breakage during shipping. We believe that the evidence supports these conclusions and we also agree with the district court's determination that nothing in the prior art anticipates these features under the exactness standard of *Monroe Auto Equip. Co. v. Heckethorn Mfg. & Sup. Co.*, 6 Cir., 332 F. 2d 406, 414, 415, and *McCullough Tool Co. v. Well Surveys, Inc.*, 10 Cir., 343 F. 2d 381, 398, or makes them obvious under the guidelines of *Graham v. John Deere Co.*, 383 U. S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545. We think the court's findings have substantial support in the record and that its conclusions are not erroneous.

In making its anticipation and obviousness arguments, Continental places its chief reliance on *Aldington Patent #2,985,354*. It admits that because the Patent Office issued the Edwards patent over the *Aldington* reference, the presumption of #213's validity is stronger than it might otherwise be.

Aldington's patent covers a lid, not a container. The problem Aldington solved in stacking lids is not the same problem solved by the 213 patent. The Z-shaped stacking ring in the Aldington lid covers the entire height of the lid side wall, whereas in #213 the stacking ring is above the middle of the cup. The arrangement in Aldington causes the bottom of one lid to rest on the top shoulder of a lower lid, thereby avoiding the nesting needed in the efficient stacking of deep walled containers such as the Edwards cup. The Aldington lids need only vertical spacing; unlike the nesting cups which must be spaced horizontally to avoid jamming in packaging, shipping and handling.

Continental relies also on the Geuder 795,437, Pfalzgraf 1,324,432, Amberg 2,707,588, Nowak 2,749,572, Flack 2,879,917, and Caine 3,045,887 patents in the prior art. Of this group, only the Caine and Flack patents were before the Patent Office. Geuder and Pfalzgraf cover large non-seamless, rigid, heavy gauge metal wash tubs and the court found they had greatly differing characteristics from those inherent in the thin wall plastic containers covered by #213. Moreover, the Geuder patent does not disclose either a single Z- or S-shaped stacker ring, but instead utilizes either a series of four S-shaped rings or alternatively two unconnected beads,³ one extending into the wash tub, and the other extending beyond the outside wall of the wash tub. In the Pfalzgraf patent the tub handles provide the primary stacking means while the Z-shaped ring in the side wall has no stacking function unless the tubs are tilted, and even then the ring is only partially operative. Amberg covers a paper container in which a solid paper-button in the bottom seems to be the primary stacking device. Amberg also shows a Z-shaped configuration at the lip of the cup, but there is no disclosure that it has a stacking function. Even if it did function as a stacker, its position at the rim would not anticipate the spacing of the Edwards ring. Nowak covers a plastic container but does not disclose that the curved rim at the top is a stacking ring, or

3. A bead is a projecting rounded surface.

if so that it reached the problem solved by positioning the stacker below the rim in #213.

Flack covers a thin walled plastic container, but the walls of the stacker ring are vertical and therefore do not have a Z-configuration. The vertical walls of Flack display the rigidity inherent in such a configuration and therefore do not have the shock absorbing quality of the 213 patent. The Caine patent covers a thin walled plastic container with a stacker ring which is neither Z-shaped nor continuous.

Miller, Continental's engineer, was working on developing thin wall plastic cups and food containers contemporaneously with Edwards. His DX-58 cup is relied on as anticipatory. The DX-58 cup has a segmented double stacking ring rather than a continuous single stacking ring. The effect of the double ring is to lessen rather than enhance the ability of the plastic cups to absorb shock. The result is that while the Edwards configuration reduces the probability of damage in handling and shipping, Miller's DX-58 cup actually increases the probability of damage. We think the court was not required to find that the claims of #213 read "squarely" or "clearly" on Miller's DX-58 cups. We accordingly see no merit in Continental's contention that Miller's activities amounted to a prior use which precludes the Edwards patent under Sec. 102(a).

Continental also claims that Miller's 1957 DX-133 half-gallon ice cream container anticipated the Edwards patent. The district court found that these containers were rectangular, had a double rim stacking configuration generally Z-shaped, but vertical at the four corners, and that these were not developed beyond the "initial design and testing phase." These findings have substantial support in the record. The court did not err in concluding that these Miller devices did not anticipate Edwards' nestable container invention, under 35 U. S. C. § 102. *Monroe Auto Equip. Co. v. Heckethorn Mfg. & Sup. Co.*, 332 F. 2d p. 415. Continental cannot argue on this record that it successfully carried its burden of proving that all the elements of #213 are

found in Continental's DX-58 cup or its DX-133 ice cream container, doing substantially the same work in substantially the same way. Id. 414.

If Continental contends in this court that #213 is invalid for obviousness, we see no merit in the contention. The district court reviewed the pertinent prior art, both that cited to and that not cited to the Patent Office, and found in considerable detail the differences between that art and #213. The court determined that in view of the fact that Continental's engineer and expert, Miller, had made many unsuccessful attempts to solve the telescopic container packing and handling problem, #213 was not obvious to a person ordinarily skilled in the art. The court followed the guidelines in *Graham v. John Deere Co.*, 383 U. S. 1, 86 S. Ct. 684, 15 L. Ed 2d 545, and we think did not err in its determination of the question of obviousness.

We see no merit either in the claim that the court erred in using Miller as the standard of ordinary skill. The district court thought Miller had extraordinary and expert skills in the art and inferred that if he could not solve the problem in the years of experimenting he devoted to finding a solution, the invention in #213 was not obvious to an ordinarily skillful person. We are persuaded by the court's compelling logic that the extraordinary embraces the ordinary.

The district court gave the filing date of November 29, 1957, to claim 1 of #213 and the date of October 29, 1958, to claims 5, 6 and 9. Consequently, the court limited consideration of prior art to the period prior to these dates.

There is no "reversible error" shown in the court's giving Illinois Tool these filing dates. The application filed October 29, 1958, was divided in the Patent Office December 13, 1962, into the subject matter on which #213 was granted June 30, 1964, and into the subject matter of Edwards patent #3,091,360⁴ granted May 28, 1963. Continental argues that

4. This patent is not in suit.

claim 1 should be limited to the December 13, 1962, filing date because the quality of resiliency was not claimed until that date. However, Continental's expert witness Vandenburg admitted that resiliency was inherent in the disclosures of the earlier application. The court did not err in fixing the filing dates and limiting consideration of Continental's activity to the period prior to these dates.

There is no merit in Continental's argument that the district court "redefined" the #213 patent claims to include "continuity of the Edwards stacking ring." The district court found that the patent had a "single circumferentially continuous Z-shaped stacking ring configuration." This is shown by the figures accompanying the application. The court did not redefine, or add to the claims.

The district court found a "real identity of means, operation and result" between #213 and Continental's cup, and that claims 1, 5, 6 and 9 of #213 are infringed by Continental's nestable cups. We think, as the district court did, that claim 1 of #213 reads literally on Continental's container and that the finding of infringement is substantially supported in the record. We cannot say that the court should not have found that although the deviation of the shoulder of the Continental container is slight and that of Edwards nearly 45%, the Continental shoulder is not oblique within the meaning of claims 5, 6 and 9. Some deviation from horizontal is necessary to permit the Z-shaped to achieve the desired resiliency. We find also that the fact there are variations in the thickness of Continental's plastic cup does not prevent Edwards' claims 1 to 6, calling for substantially uniform thickness, from reading upon it. We believe that in the context of the whole patent the thickness language requires only that the inner and outer surfaces of the cup have corresponding contours.

Patent 139 relates to a plastic container and lid designed to hold food products. Prior to March, 1960, the date of the 139 patent application, Illinois Tool had produced plastic containers which were used in conjunction with plastic lids to hold cottage cheese. However, when these containers were filled with cottage cheese, their lids tended to dislodge due to a build-up of pressure inside the container as a result of gas produced by the natural fermentation of the cottage cheese. Edwards, Illinois Tool's engineer, then began a process of experimentation with various venting devices which would prevent pressure sufficient to dislodge the plastic lids from building up inside the containers. These experiments led to the 139 patent application which provides for an integral combination holding and venting means coacting with an internal circumferentially continuous groove means on a container to provide a self-venting package by which venting occurs without dislodgment of the lid so that after excess pressure is released the package reseals itself. The obvious advantage of this device is that it prevents dislodgment of the lid by permitting gas to escape from the container and then reseals itself to prevent spoiling.

Continental argues that the court should have found that the Edwards patent was invalid because it was anticipated by the prior art or because it was obvious in light of the prior art since, it claims, all Edwards did, by his own admission, was to take standard plastic lids and add vents.

In making its anticipation and obviousness defenses, Continental relies on the Mumford 2,953,272, Doe 2,286,070, Kempe 2,223,321, Goodwin 2,279,263, and Aldington 3,109,575 patents as well as on a metal cottage cheese container lid produced by Sterling Seal Company prior to the Edwards patent application.

Continental contends that the Sterling Seal container lid completely anticipates the claims of #139. However, there are sub-

stantial differences between the Sterling Seal lid and the 139 invention. The Sterling Seal lid is metal and not plastic, so that its characteristics do not lend themselves to the coactive integral holding and venting means of the Edwards container and lid. Actually the Sterling venting means are positioned differently than those in Edwards and are not integrated with the holding means as are the vents in Edwards.

The Mumford patent is for a plastic snap-on cap designed to be used with a glass container. There are several differences between Mumford and the Edwards patent. For example, the glass bottle does not contain an internal circumferential groove and does not coact with the lid in performing the venting and sealing function. There is no integral holding and venting means disclosed by Mumford nor does Mumford involve the use of a one-piece cap as does Edwards.

The Doe paraffin treated paper milk bottle cap, and the Kempe and Goodwin paper milk bottle caps are less similar than the Mumford cap, and consequently we need not discuss them in detail in order to sustain the district court's findings that none of them anticipated the claims of #139. The record also substantially supports the court's finding that Aldington's patent did not anticipate the #139 claims. The court found that Aldington neither provided for nor referred to venting or resealing. The purpose of Aldington was to prevent leakage or spillage by a resilient sealing function of the lid.

The district court narrowly construed the #139 claims to cover only a one-piece, snap-on, thin wall plastic lid with sealing means and integral holding and venting means, when used with a thin wall plastic container. But the court found that none of the above mentioned prior art would have made the subject matter of #139 obvious to a person skilled in that art, that the subject matter was novel and had never appeared before Edwards' development of the container and self-venting lid.

The court here also referred to Continental's engineer Miller's lack of success, in view of the prior art, in his expertly skilled

attempts to produce a similar container, as substantial evidence of non-obviousness. Miller designed and tested a lid with vents in the bead, as in #139, but the lid was not accepted and was abandoned. We cannot say the court's findings were clearly erroneous.

The district court found against Continental's contention that claims 12 and 13, added to Edwards' application March 22, 1961, and July 23, 1962, respectively, are new claims covering continuous venting not disclosed in the original application; that the patented article was sold more than a year before the claims were added; and that consequently the two claims are invalid. We are persuaded by the court's reasoning that if the claims add new matter, the public right did not intervene because of the alleged sale of the original in 1960. And the court found, with substantial record support,⁵ that the concept of continuous venting means, while not claimed originally, is readily apparent. This finding distinguishes *Muncie Gear Works v. Outboard Marine & Manufacturing Co.*, 315 U. S. 759, 761, 62 S. Ct. 865, 86 L. Ed. 1171.

The district court concluded that Continental's devices infringed the #139 patent since it found the requisite identity of means, operation and result in Edwards' #139 claims 1 and 3 through 13, and in Continental's cottage cheese package and self-venting lid.

The Continental lid has the "integral holding and venting means," and the coaction between lid and container rim which the prior art relied on by Continental lacked. The holding and venting means are "downstream" from the sealing means in both the 139 and the Continental device. The holding means consists of the coaction between the lower edge of the lid bead and lower shoulder of the container grooves "which cut into" the bead of the lid. The result is to permit venting without exposing the food

5. Continental does not deny that in the district court its position was that the Edwards original application was "only slightly amended in unimportant respects."

to spoilage. The court found the Continental product indistinguishable from the #139 patent claims. The court also found, on demonstrative evidence,⁶ that in the normal use of the Continental product, in packaging cottage cheese, the Continental accused device seals, vents and reseals. The fact that the Continental container vents continuously when dry is of no consequence and cannot avoid infringement. There was testimony by Continental's witness that 95% of the accused devices were used in cottage cheese packaging. But even in a dry state, said the court, Continental's product infringes claims 12 and 13 of #139 covering continuous venting.

We see no merit in Continental's contention that in its device the package contents, and not the lid and container parts, is the sealing factor. The liquid contents merely creates a thin film between the sealing portions of the container and lid and does not in any way eliminate the sealing function of these parts.

We think there is ample evidence to sustain the contention that there is an identity of means, operation and result in Continental's accused devices and Edwards' #139 claims.

The judgment is affirmed.

6. Continental's package was tested in an experiment by Edwards in the district court by a monometer showing internal container pressure and its effect in breaking the seal, and in venting and resealing.

CONSTITUTIONAL PROVISIONS AND STATUTES INVOLVED.

The Constitutional provisions and statutes involved are:

1. *Constitution of the United States, Article I, Section 8:*

"The Congress shall have Power . . .

"To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries; . . ."

2. *Constitution of the United States, Amendment V—Due Process Clause:*

"No person shall . . . be deprived of life, liberty, or property, without due process of law; . . ."

3. *The Patent Act, 35 U. S. Code, Section 101:*

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

4. *The Patent Act, 35 U. S. Code, Section 102 (a), (b), (g):*

"A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or . . .

* * * *

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or

concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other."

5. *The Patent Act, 35 U. S. Code, Section 103:*

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made."

6. *The Patent Act, 35 U. S. Code, Section 112:*

"The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material,

or acts described in the specification and equivalents thereof."

7. *The Patent Act, 35 U. S. Code, Section 120:*

"An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application."

8. *The Patent Act, 35 U. S. Code, Section 121:*

"If two or more independent and distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of the inventions. If the other invention is made the subject of a divisional application which complies with the requirements of section 120 of this title it shall be entitled to the benefit of the filing date of the original application. A patent issuing on an application with respect to which a requirement for restriction under this section has been made, or on an application filed as a result of such a requirement, shall not be used as a reference either in the Patent and Trademark Office or in the courts against a divisional application or against the original application or any patent issued on either of them, if the divisional application is filed before the issuance of the patent on the other application. If a divisional application is directed solely to subject matter described and claimed in the original application as filed, the Commissioner may dispense with signing and execution by the inventor. The validity of a patent shall not be questioned for failure of the Commissioner to require the application to be restricted to one invention."

'213 PATENT APPLICATION
ORIGINAL CLAIM 1, AS AMENDED.

Words added are shown in italics and roman capital letters, words deleted appear in brackets.

1. A one-piece nestable *seamless* circular cup-like container of thin-wall plastic construction of *substantially uniform thickness* [and of a size to be gripped and lifted by one hand], comprising a recessed bottom and a sidewall of predetermined thickness integral therewith, said sidewall being joined to said recessed bottom at a circumferential bottom margin and tapering generally upwardly and outwardly therefrom in diverging relation to an upper margin defining an open upper end, said upper margin having a rim of predetermined axial extent which is of sufficient increased thickness relative to the thickness of the thin plastic sidewalls to lend required lateral strength at said open upper end, said sidewalls having circumferential stacking ring means formed therein, positioned below said upper margin and having an axial extent greater than the axis extent of the thickened rim portion, said stacking ring means *including a circumferentially continuous intermediate support section* having at its lower extremity circumferentially disposed externally projecting shoulder means and having at its upper extremity circumferentially disposed internal shoulder means of smaller minimum diameter than the maximum diameter of said external shoulder means and spaced upwardly from said recessed bottom, said smaller diameter being less than said greater diameter by more than twice said sidewall thickness, said internal shoulder means adapted to form a shelf to coact with the complementary external shoulder means of a like container to positively limit the extent of telescopic association of said containers *and thus counteract jamming when stacked*, both said internal shoulder means and said external shoulder means being circumferentially continuous, [the balance of said stacking ring means likewise being circumferentially con-

tinuous, and located beneath and providing a support for said internal shoulder means] SAID INTERMEDIATE SECTION OF THE STACKING MEANS INCLINED INWARDLY AND UPWARDLY TOWARD THE CUP AXIS TO PRESENT THE AFORESAID INNER SHOULDER AND TO PROVIDE A THIN-WALL, RESILIENT SUPPORT THEREFORE WHEN AXIAL PRESSURE IS APPLIED THEREAGAINST BY THE EXTERNAL SHOULDER MEANS OF A LIKE, TELESCOPICALLY ASSOCIATED CONTAINER.

'213 PATENT APPLICATION

CLAIM 10, AS AMENDED.*

Words added are shown in italics and roman capital letters, words deleted appear in brackets.

10. A one-piece nestable seamless [circular cup-like] container of thin-wall plastic material of substantially uniform thickness, comprising a [recessed] bottom and a sidewall of predetermined thickness integral therewith, *the configuration of said bottom in central axial cross-section being such as to enhance its resistance to deformation*, said sidewall being joined to said [recessed] bottom at a circumferential bottom margin and tapering generally upwardly and outwardly therefrom in diverging relation to an upper margin defining an open upper end, *said sidewall being of substantial height to permit gripping thereof by a user*, said upper margin having a rim of predetermined axial extent which is of sufficient increased [thickness] *lateral width* relative to the thickness of the thin plastic sidewalls to lend required lateral strength at said open upper end, said sidewalls having circumferential stacking ring means formed therein, positioned below AND SPACED AXIALLY FROM said upper [margin] RIM and having an axial extent greater than the axial extent of the thickened rim portion *and substantially less than the height of said sidewall*, said stacking ring means including a circumferentially [continuous] *disposed* intermediate support section having at its lower extremity circumferentially disposed externally projecting shoulder means and having at its upper extremity circumferentially disposed internal shoulder means PROJECTING INWARDLY FROM THE CONTAINER SIDEWALL AND of smaller minimum diameter than the maximum diameter of said external shoulder means and spaced upwardly from said [recessed] bottom, said smaller diameter being less than said greater diameter by more than twice said sidewall

* This claim was rewritten with the changes shown as application claim 23 and became claim 1 of the '213 patent.

thickness, said internal shoulder means adapted to form a shelf to coact with the complementary external shoulder means of a like container to positively limit the extent of telescopic association of said containers and [thus] *the maximum diameter of the container in the vicinity of said external shoulder means being sufficiently less than the diameter of THE INTERNAL CONTAINER WALL SURFACE ADJACENT AND ABOVE SAID INTERNAL SHOULDER MEANS* TO counteract jamming of like containers when stacked, both said internal shoulder means and said external shoulder means being circumferentially continuous, said intermediate section of the stacking means inclined inwardly and upwardly toward the cup axis to present the aforesaid inner shoulder means and to provide a thin-wall, resilient support therefore when axial pressure is applied thereagainst by the external shoulder means of a like, telescopically associated container.